City of

Patterson

General Plan

Background Report

CITY OF PATTERSON

GENERAL PLAN

BACKGROUND REPORT

Adopted June 11, 1992

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

TABLE OF CONTENTS (CONTINUED)

LIST OF FIGURES

INTRODUCTION

This document contains background information compiled for the City of Patterson *General Plan*. The document addresses all the significant issues to be addressed in the Plan and will also serve as the "environmental setting" portion of the environmental impact report to be prepared on the General Plan.

This *Background Report* discusses every issue required to be addressed by state general plan law as well as issues of purely local importance. It is organized into ten chapters covering groups of related issues and two appendices. It includes a Community Concerns Summary Report as Appendix A, which synthesizes comments collected early in the General Plan preparation process from interviews with public officials, a townhall meeting in April 1988, and responses to a widely distributed survey form. Appendix B summarizes special state housing requirements.

The *Background Report* was prepared by a multi-disciplinary consulting team headed by J. Laurence Mintier & Associates. Mark Pressman Associates was responsible for preparing most of Chapter IV, "Economic Conditions and Fiscal Considerations." Joseph R. Holland was responsible for preparing the sections related to streets and traffic in Chapter V, "Transportation and Circulation." Bookman-Edmonston Engineering was responsible for preparing the sections in Chapter VI, "Public Facilities and Services," on water, Dewante and Stowell was responsible for preparing the section on wastewater, and Santina & Thompson was responsible for the section on storm drainage. Jones & Stokes Associates was responsible for preparing Chapter VIII, "Natural Resources". Brown-Buntin Associates was responsible for preparing the section of Chapter IX, "Health and Safety," concerning noise. Jim Pepper was responsible for preparing Chapter X, "Urban Design and Scenic Resources." Mintier & Associates prepared the balance of the report and was responsible for editing and compiling the document.

CHAPTER I

LAND USE

CHAPTER I

LAND USE

INTRODUCTION

Land use is the principal focus of the general plan. This chapter provides a context for the General Plan by describing existing land use conditions and local, regional, state, and federal plans and policies that have a bearing on land use in Patterson.

REGIONAL SETTING

Patterson occupies about one and a half square miles in western Stanislaus County, approximately 15 miles west of Modesto. The San Joaquin River lies three miles to the east and Interstate 5 runs about three miles to the west. Farther west lies the Diablo Mountain Range. Figure I-1 shows Patterson's general location.

CITY LIMITS, STUDY AREA, AND PLANNING AREA

Patterson's city limits are defined on the west by Ward Avenue from Poppy Avenue to Sperry Avenue, Ninth Street from Sperry to the Patterson Water District canal, the Patterson Water District canal to Salado Creek, Salado Creek to Ward Avenue, and Ward Avenue to just south of its intersection with Highway 33. The city's southern limit is Poppy Avenue from Ward to Highway 33. Its eastern boundary forms a jagged edge from Walnut Avenue to Sperry Avenue. The city's northern city limits are defined the "V" formed by Highway 33 and Walnut Avenue.

For the purposes of the General Plan, the City of Patterson and the Consulting Team defined a Study Area as shown in Figure I-2. The Study Area is defined by the San Joaquin River to the east, and an area west of Interstate 5 on the west. The northern boundary is Daniel Road west of Baldwin Road, Zacharias Road between Baldwin and Highway 33, and Eucalyptus Avenue east of Highway 33. The southern boundary of the Study Area is Elfers Avenue west of Highway 33 and Almond Avenue east of Highway 33.

The Study Area contains a total of about 12,000 acres, excluding streets and railroads, of which approximately 1,000 acres (8.3 percent) are incorporated and 11,000 acres (92.5 percent) are unincorporated.

During the Issues and Options phase of the general plan program, the City Council defined a Planning Area. The Planning Area was further refined during the *Draft General Plan* review process. Figure I-2 shows the Study Area and Planning Area boundaries and city limits of Patterson.

HISTORY OF LAND USE PLANNING IN PATTERSON

Early Developments

The Patterson town and colony were originally laid out in 1909 by Thomas W. Patterson. Patterson laid out the city in its unique street pattern, and subdivided lots outside the city into five-, ten-, and twenty-acre plots.

In December 1919, Patterson voted to become an incorporated city. The first Planning Commission was formed in 1949. A zoning ordinance and map were completed in 1955, and the city's street tree ordinance was established.

1959 General Plan

General planning in Patterson started as a joint project with Stanislaus County and its incorporated cities in 1957 with financing from the U.S. Housing and Home Finance Agency. The Program was assigned to the Cities-County Planning Advisory Committee, made up of representatives of the participating agencies. The committee was also responsible for the standardization of subdivision and zoning ordinances, a thoroughfare plan, and housing survey.

The Patterson Planning Commission and City Council adopted the General Plan in April 1959. By February 1961, general plans for the Modesto-Ceres-Empire Area, Newman, Oakdale, Riverbank, and Patterson had been completed and adopted by the Cities and County Planning Commissions. In 1961, the County Planning Commission completed and adopted a General Plan for all of Stanislaus County.

1973 General Plan

A comprehensive revision of the 1959 plan was completed in 1973. Preparation of the plan was financed in part by a grant from the California Department of Housing and Community Development. The plan was prepared by the Stanislaus Area Association of Governments (SAAG). As part of the plan, a number of countywide Environmental Resource Management Elements (ERME) prepared by SAAG were adopted. ERME sections included: soils, water, geology and seismic safety, agriculture, recreation/open space, and wildlife and vegetation.

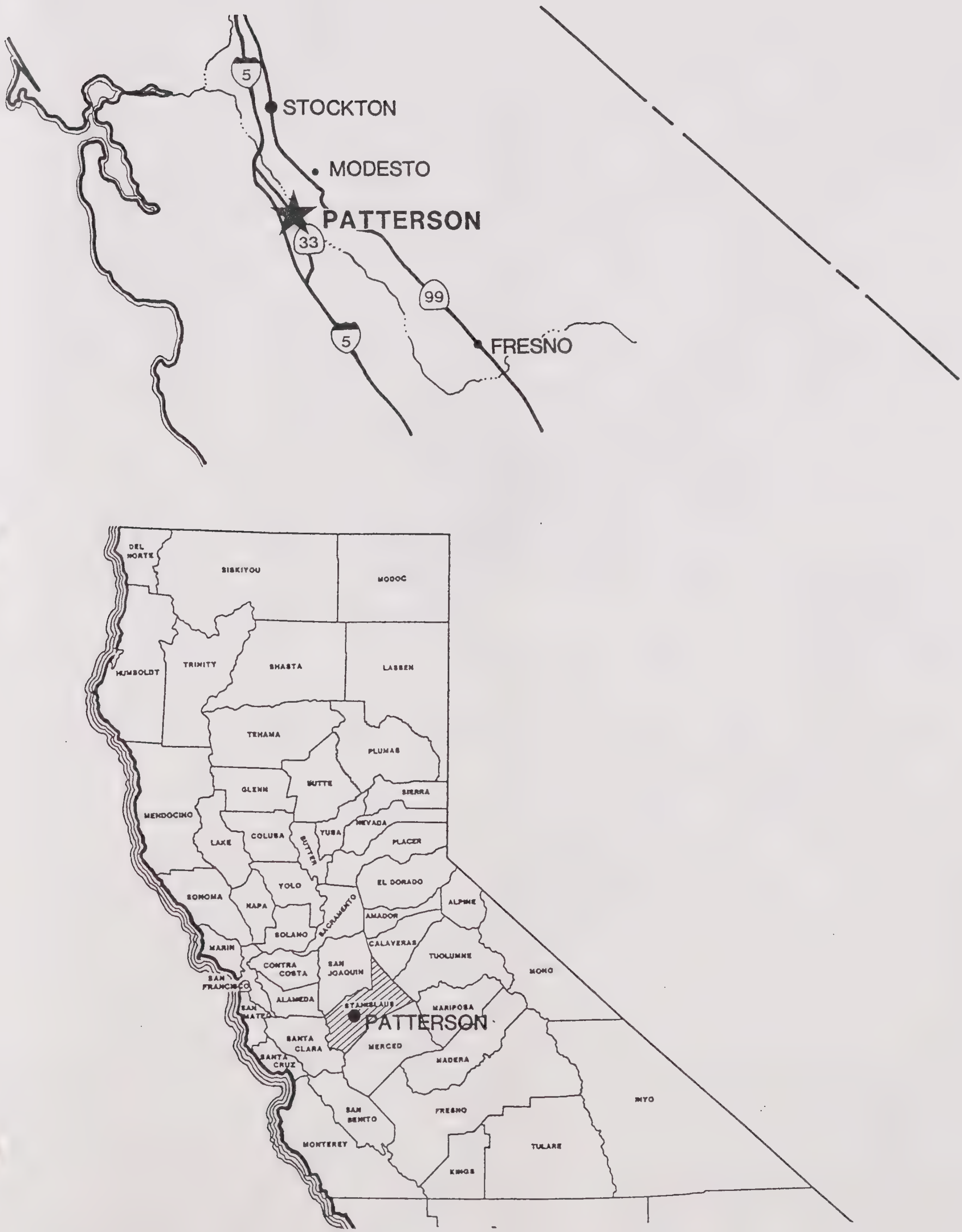
1978 General Plan

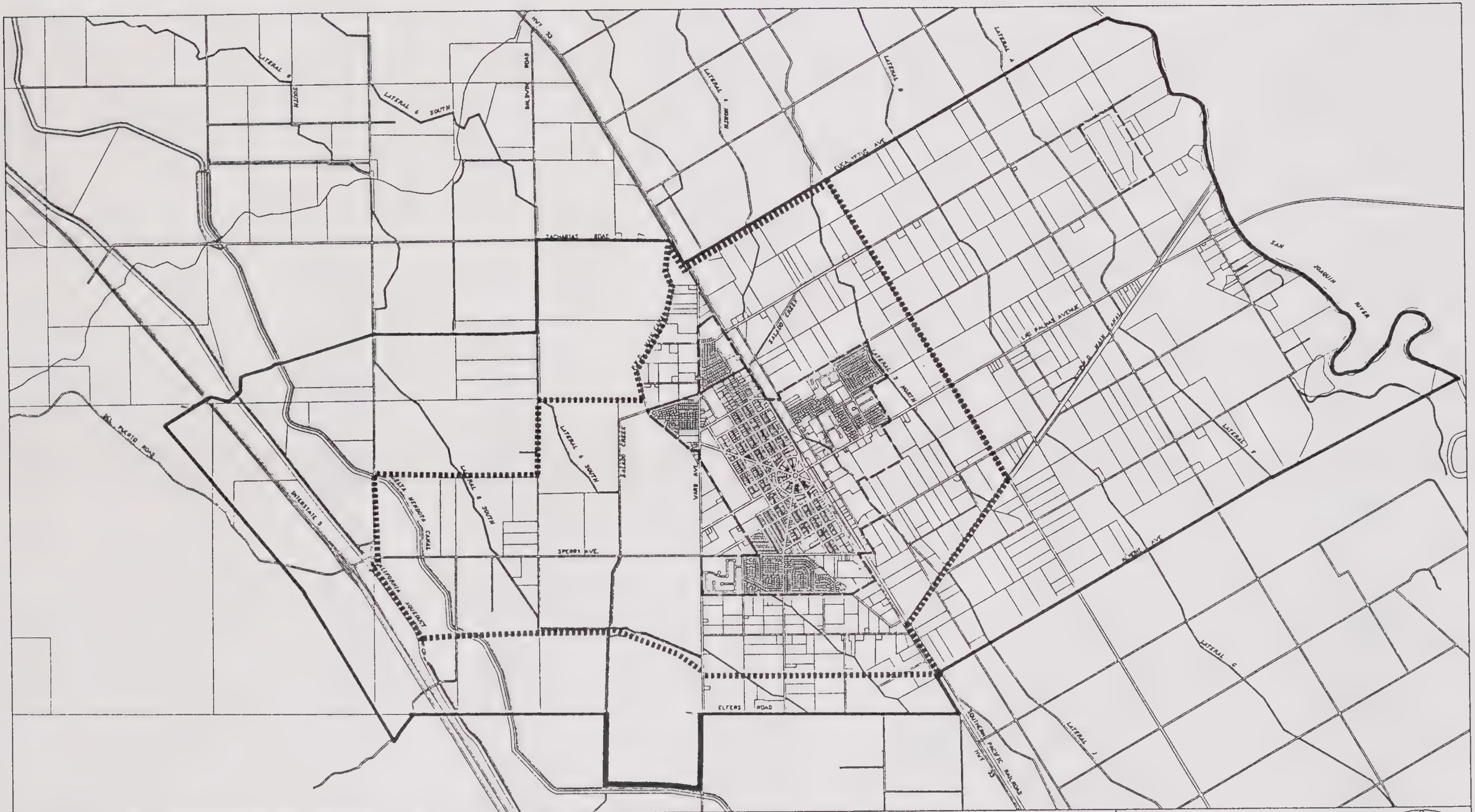
After the adoption of the 1973 General Plan, a number of state laws concerning general plans and zoning were passed. The formation of policy on future growth and concern over general plan and zoning consistency prompted a general plan study and revision. The 1978 plan contained the nine mandatory elements: land use, housing, circulation, conservation, open space, noise, safety, seismic safety, and scenic highways. (Since then, state law has consolidated safety and seismic safety into one required element and the scenic highways element has been deleted.)

Issues addressed in the 1978 General Plan included expansion of the City's sewer treatment plant and the City's purchase of the water company. Land outside the city limits within the General Plan area was designated as Residential Reserve, Commercial Reserve, and Industrial Reserve. The 1978 General Plan land use diagram and policies was the General Plan guiding the city until adoption of the revised General Plan in 1992.

Figure I-1

REGIONAL LOCATOR MAP





Study Area
Planning Area
City Limits

Figure I-2

CITY LIMITS, PLANNING AREA, AND STUDY AREA BOUNDARIES

Sources: City of Patterson and J. Laurence Mintier & Associates, 1990

Patterson Planning Area

The 1978 General Plan has a number of deficiencies. First, it is over ten years old, and does not reflect the growth and changes that have taken place in the city. Secondly, the policy language is overly general, and contains little direction for implementation. In addition, the plan does not define density provisions for land use designations, and it does not reflect the City's Master Sewer, Water, and Drainage Master Plans, or the airport land use plans.

The existing general plan land use designations are shown in Figure I-3.

1984-85 General Plan Revision Preliminary EIR

In 1984, the City of Patterson initiated a revision of its 1978 General Plan. The City began by preparing a preliminary Environmental Impact Report on potential land uses under a revised General Plan. The Preliminary EIR evaluated a proposed General Plan area extending beyond the 1978 General Plan area south to Elfers Road between Ward Avenue and Highway 33, north to Eucalyptus Avenue between Highway 33 and Sycamore Avenue, and east to Sycamore Avenue. The Preliminary EIR outlined a thorough revision of the General Plan.

The Preliminary EIR was adopted by the City Council in 1985, however, no general plan or land use diagram or policy development was completed. Information and comments included in the Preliminary General Plan EIR will be used in the current general plan revision.

1985 Housing Element

Responding to new state housing element requirements, the City adopted a revised housing element in 1985. The housing element superceded the element contained in the 1978 General Plan. It contains goals, objectives, and recommendations for implementation of specified actions. The recommended actions are intended to respond to anticipated housing needs of Patterson residents through 1992. The plan discusses existing and projected housing needs, including available land and potential constraints on housing development.

1988-92 General Plan Revision

Prompted by growth pressures and concern over the future direction of Patterson, the City retained the Consultant Team under the direction of J. Laurence Mintier & Associates to undertake a complete revision of the City's General Plan. This *Background Report* was the first part of the general plan revision.

ANNEXATION HISTORY

Since its incorporation in 1919, the City of Patterson through annexation has grown to about 1.6 square miles. Figure I-4 depicts this annexation growth and Table I-1 list the annexations since 1960.

TABLE I-1

ANNEXATION HISTORY

Map No.	Designation	Effective Date
1.	Sacred Heart School Addition	8/22/61
2.	Masonic Temple Tract Addition	5/24/62
3.	Corriea Tract Addition	4/11/61
4.	East Colony Tract No. 2	4/26/56
5.	Ielmini Tract No. 1	5/20/59
6.	Patterson Frozen Food Addition	12/21/62
7.	Northmead Addition	1/22/20
8.	Salado Addition	8/64
9.	Star Craft	10/21/63
10.	Enterprise Addition	12/14/67
11.	Del Puerto Estates	5/21/69
12.	Buehner Addition	6/12/69
13.	Cozzitorto Addition	10/27/69
14.	Las Palmas Estates Addition	10/27/70
15.	Keystone Terrace Addition	12/14/70
16.	Kaiser Addition	12/19/71
17.	West Northmead Addition	12/17/71
18.	Azevedo Addition	2/03/72
19.	Cochran Manor No. 1	3/21/72
20.	Bingham Addition	6/06/72
21.	Enterprise No. 2 Addition	10/03/72
22.	"M" Street Addition	4/73
23.	Lehman Addition	6/06/72
24.	Thompson Addition	1975
25.	Lilac Avenue Addition	8/22/74
26.	Hillview Addition	1973
27.	First and Las Palmas Addition	7/06/76
28.	First and Orange Addition	8/07/76
29.	Johnson Annexation	12/07/76
30.	Jensen Addition	7/05/77
31.	Map of Patterson Colony - Subtract No.1	1/02/79
32.	Lot 1041 "Map of Lots 402 and 403 of Patterson Colony Subtract No.2	6/12/79
33.	Traiina Annexation	5/06/80
34.	East Colony Tract	7/26/56
35.	Reseigh No. 2 Annexation, Res. No. 80-155	10/21/80
36.	Humbert Annexation	12/12/80
37.	Eastside No. 1 Annexation	12/15/80
38.	West Side No. 1	10/15/80
39.	Eastside No. 2	9/23/80
40.	Southside No. 2	7/10/86
41.	Southside	7/10/86
42.	Patterson Ranch	7/18/86

Source: Stanislaus County Planning Department, 1988; City of Patterson, 1992.

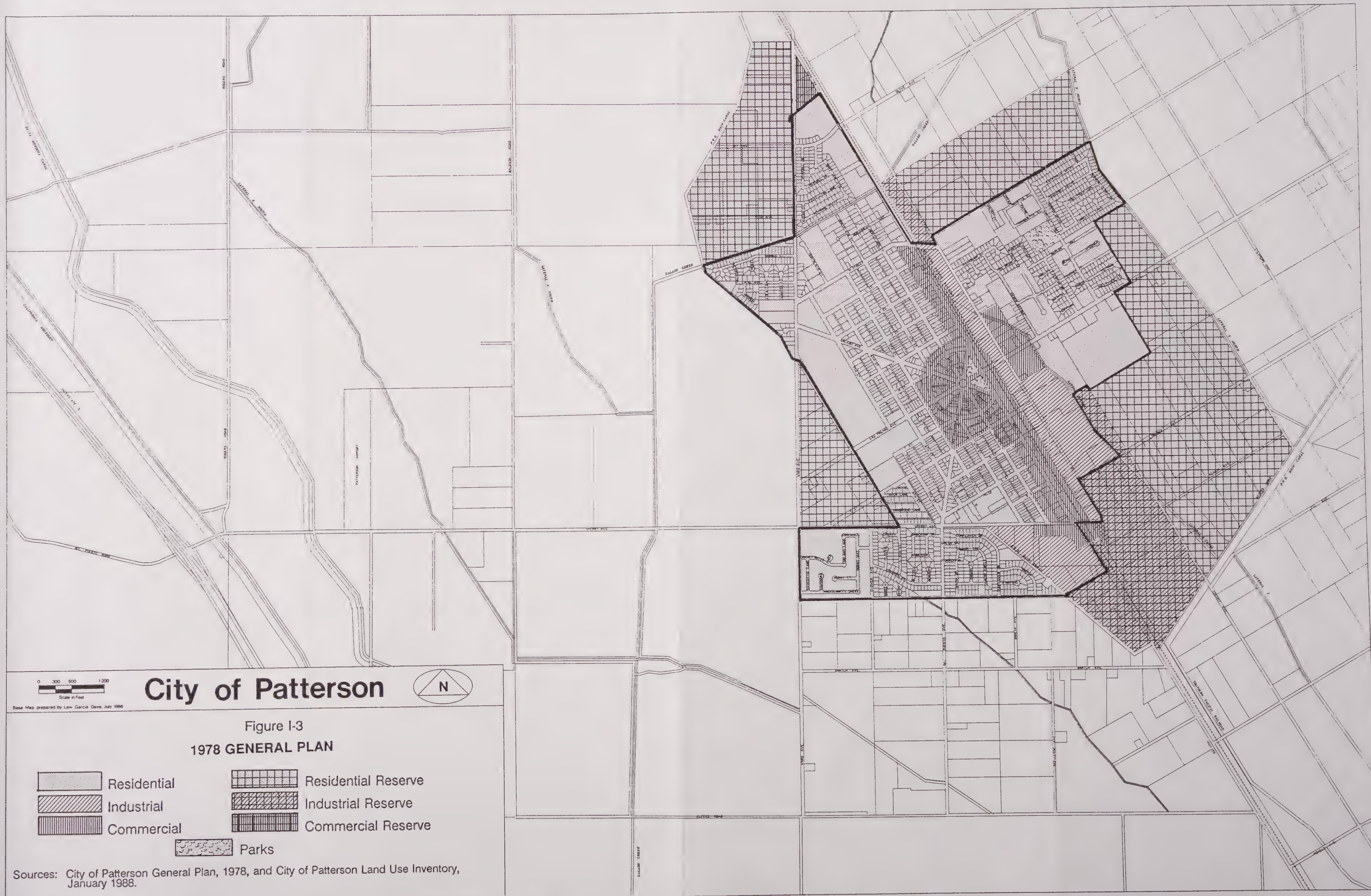
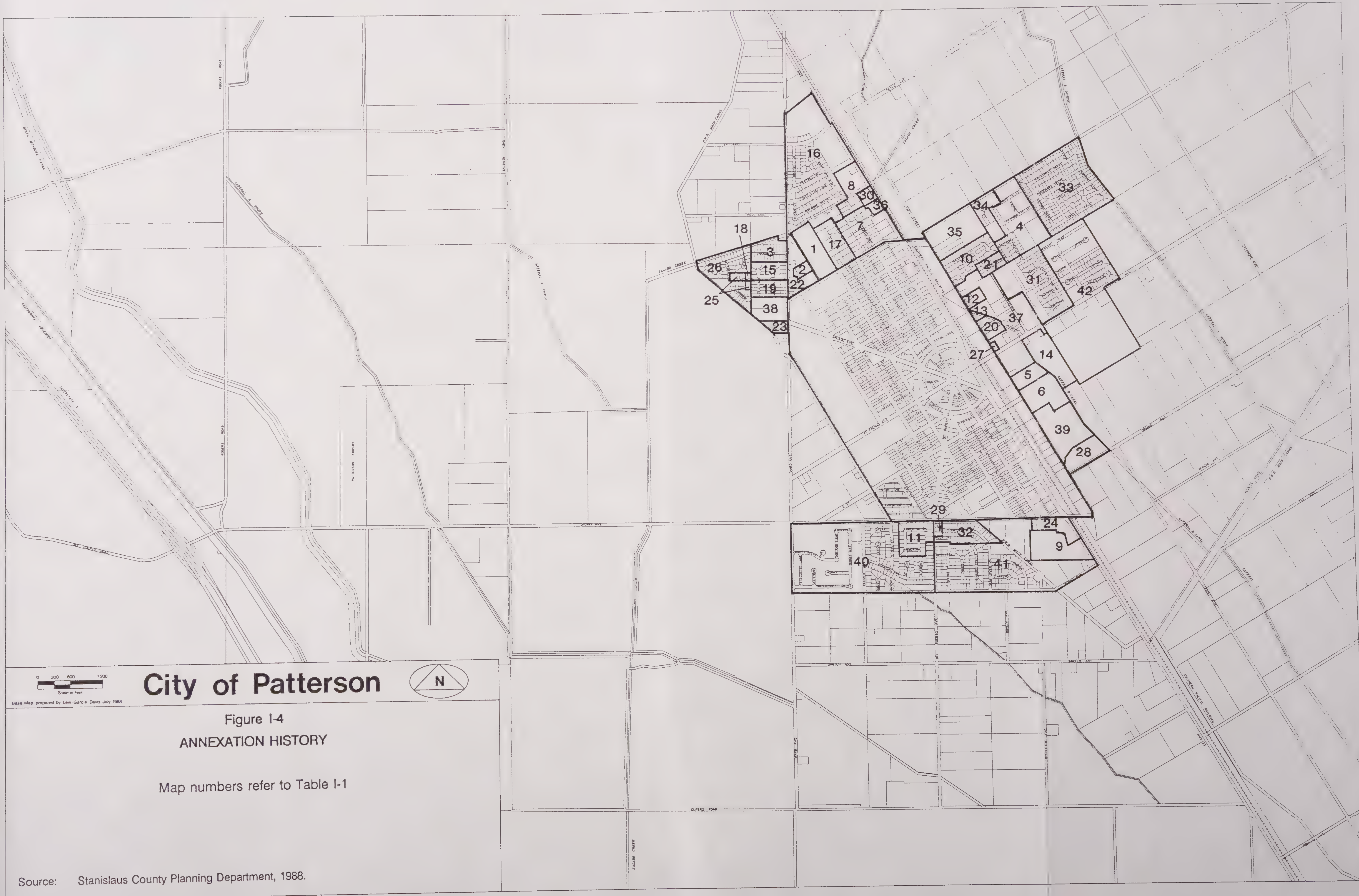


Figure I-3

1978 GENERAL PLAN

Sources: City of Patterson General Plan, 1978, and City of Patterson Land Use Inventory, January 1988.



City of Patterson

Figure I-4

ANNEXATION HISTORY

Map numbers refer to Table I-1

Source: Stanislaus County Planning Department, 1988.

Annexations to cities are regulated by the Cortese-Knox Local Government Reorganization Act (California Government Code Sections 56000 et seq.). Generally, any land that is contiguous to a city may be annexed to the city if the annexation does not result in an island of unincorporated land completely surrounded by the city or in narrow strips of unincorporated land.

Proponents of an annexation must secure the approval of the affected city and the Local Agency Formation Commission (discussed later in this chapter). In inhabited territory--territory with at least 12 voters--a petition signed by 25 percent of the qualified electors in the area is filed with the city council which then calls a public hearing. A special election must then be held and the annexation must be approved by a majority of those voting. Proposals for annexing uninhabited territory--territory with fewer than 12 voters--may be initiated by either the city or the landowners. No election is held and, if approved by the Local Agency Formation Commission, the annexation occurs automatically, unless there is a protest by 50 percent or more of the owners of land and improvements in the area.

ZONING

Under state law, cities and counties have broad latitude in establishing zoning standards and procedures. Outside of a general requirement for open space zoning and several special requirements governing residential zoning, state law establishes only broadly the scope of zoning regulation and sets minimum standards for its adoption and administration. One key requirement, however, is that zoning be consistent with the general plan.

Patterson's zoning ordinance, originally adopted in 1955, has been amended many times over the years.

Residential Agricultural (R-A)

The purpose of the Residential Agricultural zone is to stabilize and protect the rural residential characteristics of the area to which it is applied. The R-A zone is intended for rural family homes with limited agricultural uses.

The minimum lot area in the R-A zone is 7,000 square feet for corner lots and 6,000 square feet for interior lots with minimum lot widths of 70 feet for corner lots and 60 feet for interior. A maximum of 40 percent of the site is permitted for aggregate building coverage. Front yards must be at least 25 feet and at most 35 feet. Rear yards must be at least 20 feet. Side yards must be at least 10 feet on the street side and 5 feet on respective sides of interior lots. No main building may exceed 35 feet in height and no accessory structure may exceed 15 feet. Accessory buildings used for the keeping of poultry or animals must be at least 60 feet from the front property line.

Single Family Residential (R-1)

The Single Family Residential zone is intended to provide for single-family homes, together with schools, parks, open space, and other public services.

The minimum lot area in the R-1 zone is 7,000 square feet for corner lots and 6,000 square feet for interior lots with minimum lot widths of 70 feet for corner lots, 60 feet for interior lots, and 40 feet for cul-de-sac lots, and a minimum lot depth of 100 feet. Front and rear yards must be at least 20 feet, and side yards must be at least 10 feet on the street side and 5 feet on respective sides of interior

lots. No main building may exceed 35 feet in height and no accessory structure may exceed 20 feet. Off-street parking must be provided.

Two Family Residential (R-2)

The R-2 zone is intended to allow for two family homes and for the compatible mingling of single-family dwellings and duplexes. Lot and yard, height, and architectural review requirements are identical to those of the R-1 zone. Off-street parking must be provided.

Medium Density Multiple-Family Residential (R-3)

The Medium Density Multiple-Family Residential zone allows for multiple-family dwellings or apartment houses and duplexes.

The minimum lot area in the R-3 zone is 7,000 square feet for corner lots and 6,000 square feet for interior lots with minimum lot widths of 70 feet for corner lots, 60 feet for interior lots, and 40 feet for cul-de-sac lots, and a minimum lot depth of 100 feet. The minimum lot area per dwelling unit is 2,178 square feet, equivalent to 20 units per acre. Front yards must be at least 20 feet, rear yards must be at least 5 feet, and side yards must be at least 10 feet on the street side and 5 feet on respective sides of interior lots, provided that the minimum space between dwellings on adjacent parcels is 12 feet. There must be at least 10 feet between dwelling units on the same lot and 10 feet between dwellings and accessory buildings. No main building may exceed 35 feet in height and no accessory structure may exceed 20 feet. Site plans must be approved by an architectural review committee. Off-street parking must be provided.

Neighborhood Commercial (C-1)

The Neighborhood Commercial zone is intended to provide for centers for convenient shopping and services in residential neighborhoods. The C-1 zone provides for commercial uses when conducted within a building, and for two-family dwellings, multiple-family dwellings, professional offices, churches, libraries, other public and quasi-public facilities, and rooming and boarding houses.

The minimum lot area in the C-1 zone is 5,000 square feet. Front yards must be at least 15 feet, except when abutting a residential zone, in which case the minimum front yard is 20 feet. Rear yards must be at least 10 feet. There is no minimum side yard, except when lots abut a residential zone, in which cases the side yard must be at least that required in the abutting zone. There must be at least 20 feet between dwelling units on the same lot, 10 feet between dwellings and accessory buildings. No main building may exceed 35 feet in height. Off-street parking must be provided.

Central Commercial (C-2)

The C-2 zone allows for retail stores and personal service establishments.

The minimum lot area in the C-2 zone is 2,000 square feet. There are no minimum front and rear yard requirements, except when abutting a residential zone, in which case the minimum front and rear yard is the same as that required in the abutting zone. Rear yards abutting on alleys must be at least 10 feet. There is no minimum side yard, except when lots abut a residential zone, in which case the side yard must be at least 5 feet. No building or structure may exceed 50 feet in height.

Heavy Commercial (C-3)

The Heavy Commercial zone allows for all uses permitted in C-2 zone, and for wholesale and storage within buildings and secondhand sales.

The minimum lot area in the C-3 zone is 2,000 square feet. There are no minimum yard requirements except when abutting a residential zone, in which case the minimum front yard requirement must be at that required in the abutting zone, and side and rear yards must be at least 5 feet. Rear yards abutting an alley must be at least 10 feet. No building or structure may exceed 50 feet in height.

Light Industrial (LM)

The Light Industrial zone allows for retail and wholesale stores and storage, service establishments, other light industrial uses.

There are no minimum lot area requirements in the LM zone. Front yards and side yards of corner lots must be at least 15 feet. There are no minimum side and rear yard requirements except when abutting a residential zone, in which case the minimum side yards must be at least 5 feet and rear yards must be 10 feet. If the LM zone is separated from a residential zone by a street, alley, canal, or other public right-of-way, no rear yard is required. No building or structure may exceed 35 feet in height. Off-street parking must be provided.

Industrial (M)

The Industrial zone provides areas for operation of industries, including retail and wholesale store or storage, service establishments, light industrial, and manufacturing uses.

There are no minimum lot or yard requirements in the M zone. No building or structure may exceed 50 feet in height.

Planned Development (PD)

The PD is a combining zone intended for parcels which are suitable for proposed developments and for which detailed development plans have been submitted and approved and/or for which detailed written development plans and/or regulations are approved.

Figure I-5 shows the current zoning for Patterson and Table I-2 shows the distribution of Patterson land among zoning categories. It should be noted that the acreage total in Table I-2 excludes land covered by highways and roads which run through the city. The total therefore falls short of the total gross acreage by about 180 acres. A comparison of the City's zoning map with the *1978 General Plan* map reveals that there are no significant inconsistencies between them.

As Table I-2 indicates, over 75 percent of the land in the city is zoned for some kind of residential use, with about two-thirds of this land set aside exclusively for single-family dwellings. Industrial zoning occupies about 13 percent of the city's land. The bulk of this land is located east of Second Street, and south of Sperry east of the Patterson Water District main canal. Commercial zoning makes up about 8 percent of the city's land. Commercial zoning is concentrated in the downtown circle and in a strip on the west side of Second Street/Highway 33.

Two of the City's zoning designations are not applied to any land within the city: R-A (Residential Agricultural) and C-1 (Neighborhood Commercial).

TABLE I-2

ACREAGE BY ZONING CATEGORY
City of Patterson
1990

Zoning Category	Acreage	% of Total
R-A	0.0	0.0
R-1	475.0	64.6
R-2	16.2	2.2
R-3	76.0	10.3
C-1	0.0	0.0
C-2	31.6	4.3
C-3	25.2	3.4
LM	17.3	2.3
M	87.0	11.8
PD	7.5	1.0
Total	**735.6**	**100.0**

Sources: City of Patterson Land Use Inventory, Fall 1990; City of Patterson *Zoning Ordinance*

EXISTING LAND USE

Based on conditions as of Fall 1990, the City of Patterson conducted an inventory of existing land uses within the Study Area. The results of the survey are summarized in Table I-3 and the generalized land uses as identified by the survey are shown in Figure I-6.

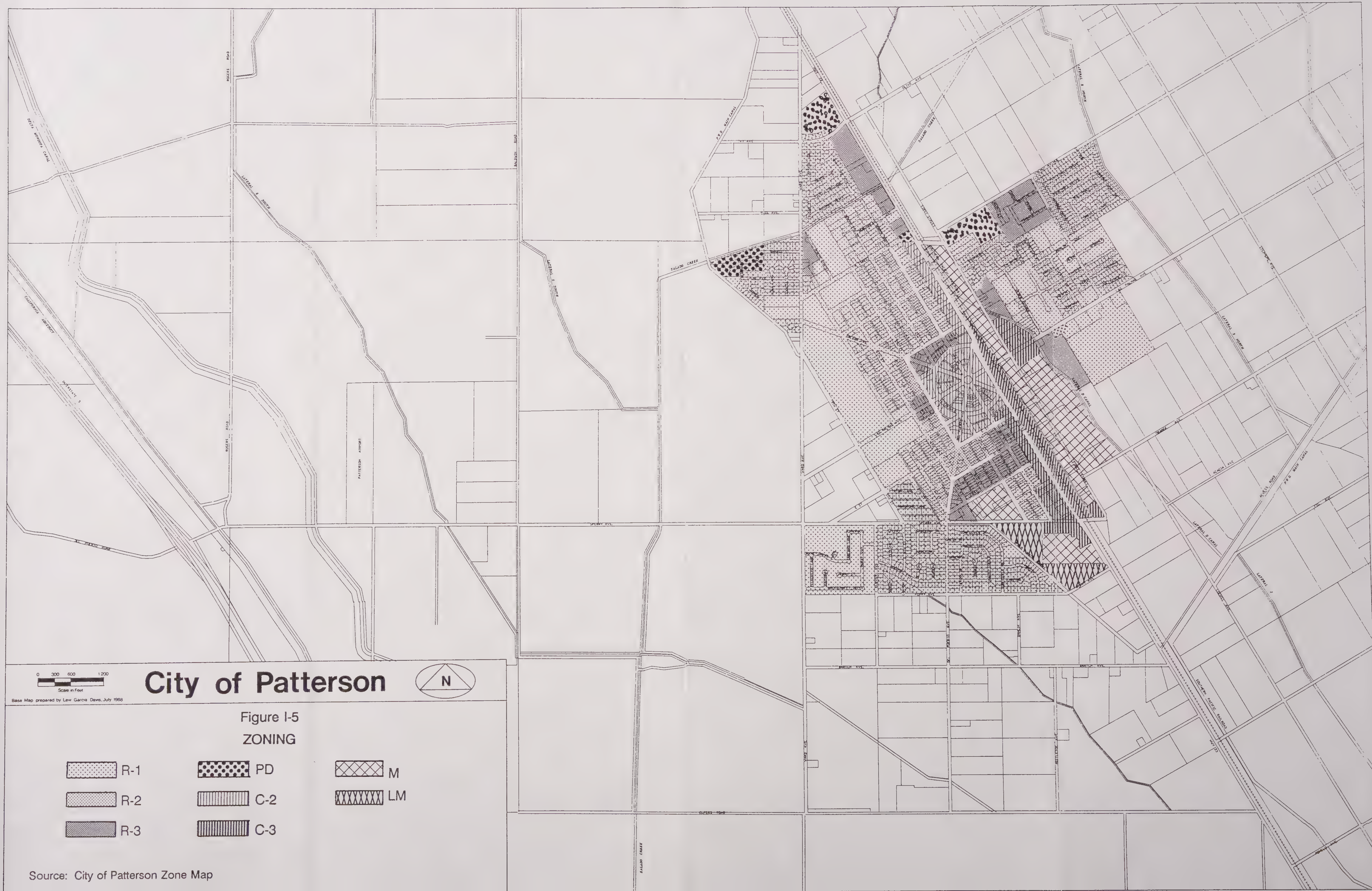


Figure I-5
ZONING

Source: City of Patterson Zone Map

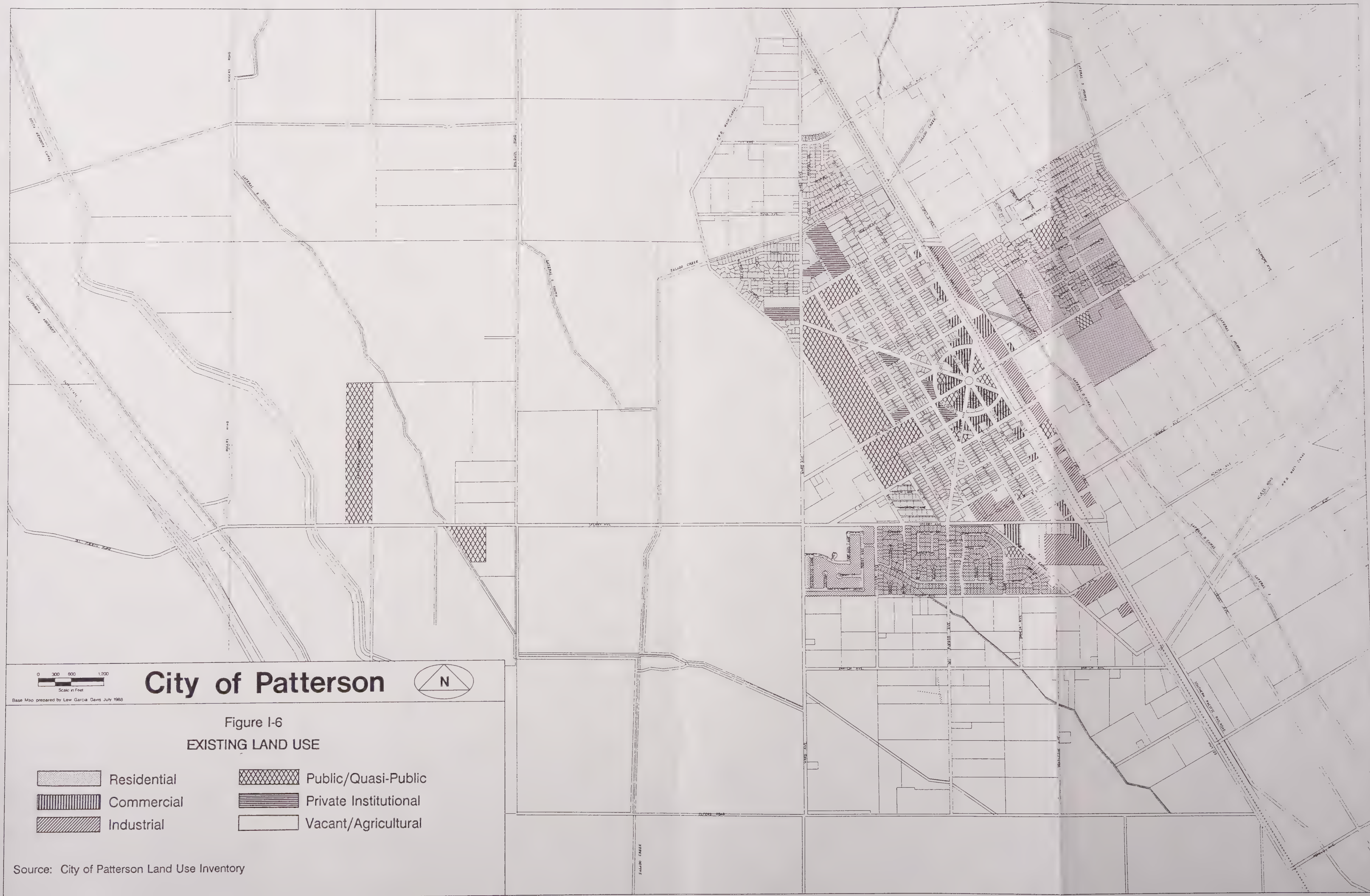


Figure I-6

EXISTING LAND USE

Source: City of Patterson Land Use Inventory

TABLE I-3

NET ACREAGE BY GENERALIZED LAND USE CATEGORY
Fall 1990

Land Use Category	Net Acreage	% of Study Area	% of Non-Ag Land
AGRICULTURAL	**10,108.4**	**91.6**	
NON-AGRICULTURAL			
Residential			
Single-Family	467.7		49.9
Multi-Family, 2 to 4 Units	3.4		0.4
Multi-Family, 5 or More Units	20.6		2.2
Mobilehomes	21.5		2.3
Public Housing	14.6		1.5
Residential care facility	0.9		0.1
Total Residential	**528.7**		**56.4**
Commercial			
Motel/Hotel	0.3		--
Retail Commercial	33.9		3.6
Restaurants and Bars	2.2		0.2
Offices/Financial Institutions	4.8		0.5
Personal Service Commercial	5.7		0.6
Mixed Commercial	0.9		0.1
Total Commercial	**47.4**		**5.1**
Industrial	**93.0**		**9.9**
Institutional			
Public Institutional (Excluding public housing)	186.2		19.9
Private Institutional	54.6		5.8
Total Institutional	**240.8**		**25.7**
Vacant	**26.7**		**2.9**
TOTAL NON-AGRICULTURAL	**936.6**	**8.5**	**100.0**
TOTAL STUDY AREA	**11,045.0**	**100.0**	**100.0**

Source: City of Patterson Land Use Inventory, Fall 1990

Table I-3 reveals that the mix of uses as identified in the land use survey is similar to the distribution of zoning designations shown in Table I-2. As indicated in Table I-3, the Study Area is composed primarily of agricultural uses outside the city limits. While the percentage of land attributed to residential uses (56 percent) is slightly lower than the amount zoned for residential uses, public and private institutional uses (e.g. schools, churches, hospital) are located primarily on residentially-zoned land.

Future growth in the city is dependent on the development of vacant lands within the city, and expansion and conversion of agricultural lands. Figure I-7 shows vacant and agricultural lands as of Fall 1990.

The City of Patterson owns land used for various purposes, including its sewage treatment plant, parks, police and fire department building, and other uses. A total of 128.8 acres are owned by the City. A large portion of this acreage (about 80 acres) is non-contiguous land located east of the city, near the San Joaquin River, which accommodates the City's sewage treatment plant and evaporation ponds. City-owned land is shown in Figure I-8.

LOCAL AGENCY FORMATION COMMISSION AND SPHERE OF INFLUENCE

In 1985, the various state laws regulating city and special district organization and annexations were consolidated in the Cortese-Knox Local Government Reorganization Act (*Government Code* §56000 *et seq.*).

The 1963 Knox-Nisbet Act, which was superseded by Cortese-Knox, created local agency formation commissions (LAFCOs) in each county in California to regulate the organization and extension of services provided by cities and special districts. The Act declares that "among the purposes of the commission are the discouragement of urban sprawl and encouragement of the orderly formation and development of local agencies based upon local conditions and circumstances. One of the objects of the commission is to make studies and to obtain and furnish information which will contribute to the logical and reasonable development of local agencies in each county and to shape the development of local agencies so as to advantageously provide for the present and future needs of each county and its communities" (*Government Code* §56301). In meeting these responsibilities, each LAFCO is required "to review and approve or disapprove, with or without amendment, wholly, partially, or conditionally, proposals for changes of organization or reorganization" (*Government Code* §56375 (a)).

According to Section 56021 of the *Government Code*, "change of organization" means any of the following:

- A city incorporation
- A district formation
- An annexation to, or detachment from, a city or district
- A disincorporation of a city
- A district dissolution
- A consolidation of cities or special districts
- A merger or establishment of a subsidiary district

The special districts that fall under LAFCO jurisdiction are defined in *Government Code* Section 56036. School districts and redevelopment agencies, among others, are excluded within this definition and are, therefore, not subject to LAFCO review.

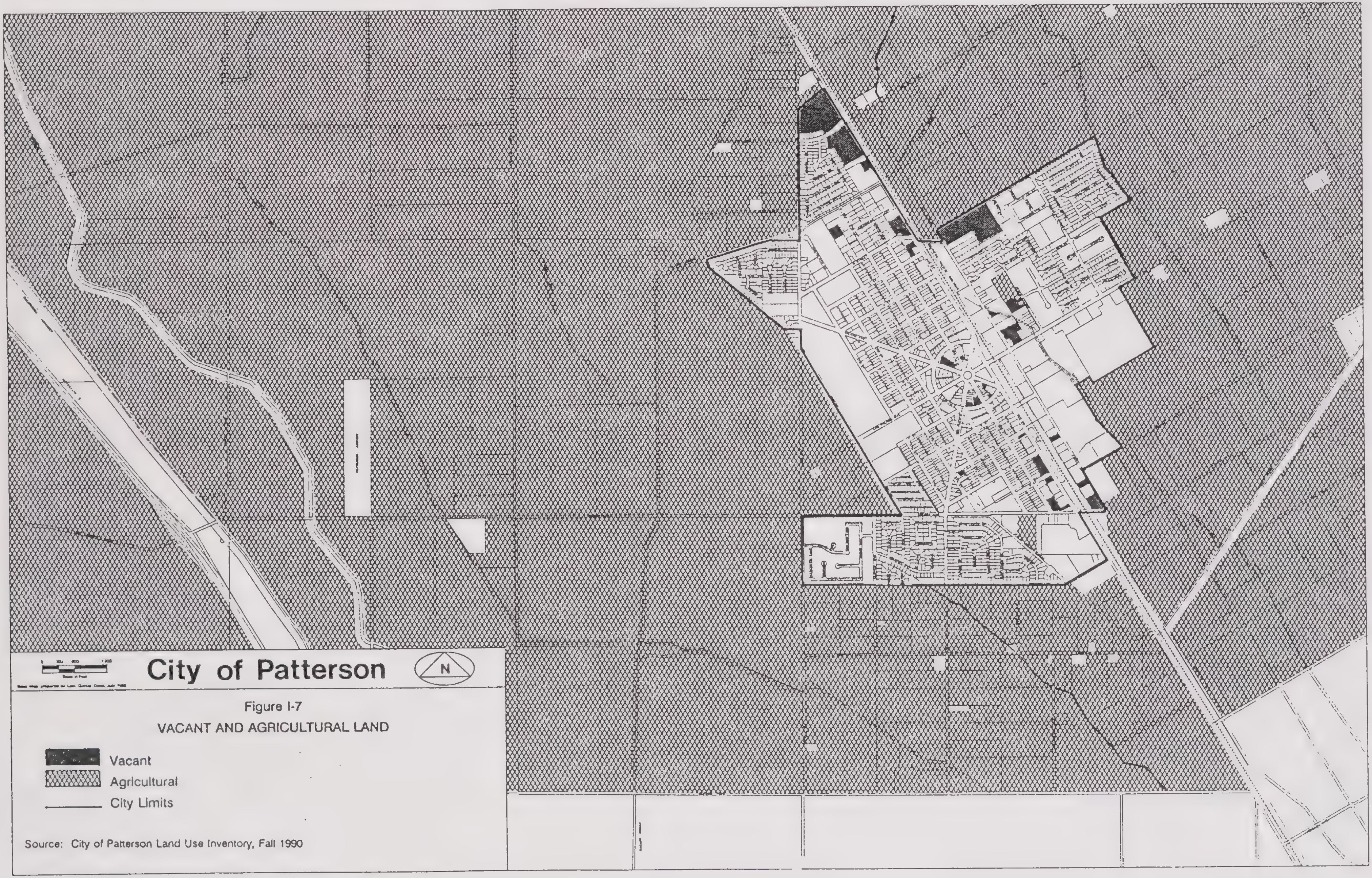


Figure I-7

VACANT AND AGRICULTURAL LAND

Vacant

Agricultural

City Limits

Source: City of Patterson Land Use Inventory, Fall 1990

City of Patterson

Base Map prepared by Lew Garcia Davis, July 1988

Figure I-8

CITY-OWNED LAND

Source: City of Patterson Planning Department, 1988.

In addition to the regulatory responsibilities of LAFCO, the commission is empowered to initiate and to make studies of existing governmental agencies. These studies include, but are not limited to, inventorying local agencies and determining their maximum service areas and service capabilities.

As the basis in part for making decisions about organizational changes and annexations, LAFCO must adopt a sphere of influence for each local agency subject to LAFCO regulation. The Cortese-Knox Act defines a sphere of influence as "a plan for the probable ultimate physical boundaries and service area of a local agency" (*Government Code* §56076). In practice, "ultimate" is typically defined as 20 years. Under *Government Code Section* 56080, this can include the identification of an "urban service area" which identifies an area within a city's sphere of influence which is served by urban facilities, utilities, and services, or which is proposed to be served during the first five years of an adopted capital improvement program. The urban service area boundary shall be adopted by the LAFCO in cooperation with the affected city (*Government Code* §56080). Annexations by the affected city of land which falls within an identified "urban service area boundary" may not be denied by the LAFCO which adopts the boundaries.

In determining the sphere of influence for each local agency, the LAFCO must consider and prepare a written statement of its determinations with respect to each of the following:

- The present and planned land uses in the area, including agricultural and open space lands.

- The present and probable need for public facilities and services in the area.

- The present capacity of public facilities and the adequacy of public services which the agency provides or is authorized to provide.

- The existence of any social or economic communities of interest in the area if the commission determines that they are relevant to the agency (*Government Code* §56425).

Once these spheres are adopted, LAFCO decisions must be consistent with applicable spheres (*Government Code* §56375.5). This means that LAFCO may not approve city annexations outside the adopted sphere of influence for a city.

Patterson's current sphere of influence was adopted by the Stanislaus County LAFCO in 1984. The City's sphere boundaries are coterminous with the existing General Plan boundaries (see Figure I-3). Figure I-9 shows the City's sphere of influence as approved by LAFCO.

The following LAFCO policies for review of proposals are included in LAFCO's *Policies and Procedures Manual*, August 1991, and are relevant to the Patterson *General Plan*:

101. Encouraging orderly formation and development of agencies:

    01 The sphere of influence determined by the Commission shall take into account the provision of an adequate level and range of services to each community within the county. . .

    02 Any proposal for a change of organization or reorganization shall contain sufficient information to determine that adequate services, facilities, and improvements can be

provided and financed by the agencies responsible for the provision of such services, facilities, and improvements.

03 Any proposal for a change of organization or reorganization which will result in residential development shall address the impact on public school facilities and provide upon submittal of and application, sufficient information to determine that adequate services and facilities can be provided.

103 Encouraging orderly urban development and preservation of open space patterns:

01 The Commission encourages well planned, orderly, and compact urban development patterns for all developing areas. Also, the county, cities, and those districts providing urban services, are encouraged to develop and implement plans and policies which will provide for well-planned, orderly and compact urban development patterns, with consideration of preserving permanent open space lands within those urban patterns.

02 Development of existing vacant non open space, and non-prime agricultural land within an agency's boundaries is encouraged prior to further annexation and development.

03 Annexation proposals to cities or districts providing urban services of undeveloped or agricultural parcels shall show: that urban development is imminent for all or a substantial portion of the proposal area; that urban development will be contiguous with existing or proposed development; and that a planned, orderly, and compact urban development pattern will result. Proposals resulting in leap frog, non-contiguous urban development patterns shall be discouraged.

104 Encouraging conservation of prime agricultural lands and open space areas:

01 Proposals which would conflict with the goals of maintaining the physical and economic integrity of open space lands, agricultural lands, or agricultural preserve areas in open space uses, as indicated on the city or county general plan, shall be discouraged.

02 Annexation and development of existing vacant non-open space lands, and non-prime agricultural land within an agency's sphere of influence should occur prior to development outside of an existing sphere of influence.

03 Loss of agricultural lands should not be a primary issue for annexation where city and county general plans indicate urban development is appropriate and there is consistency with the agency's sphere of influence.

COUNTY PLANNING AND LAND USE REGULATION

The County of Stanislaus *General Plan* and zoning regulate land use in the unincorporated Patterson Study Area. The County General Plan was adopted in June 1987.

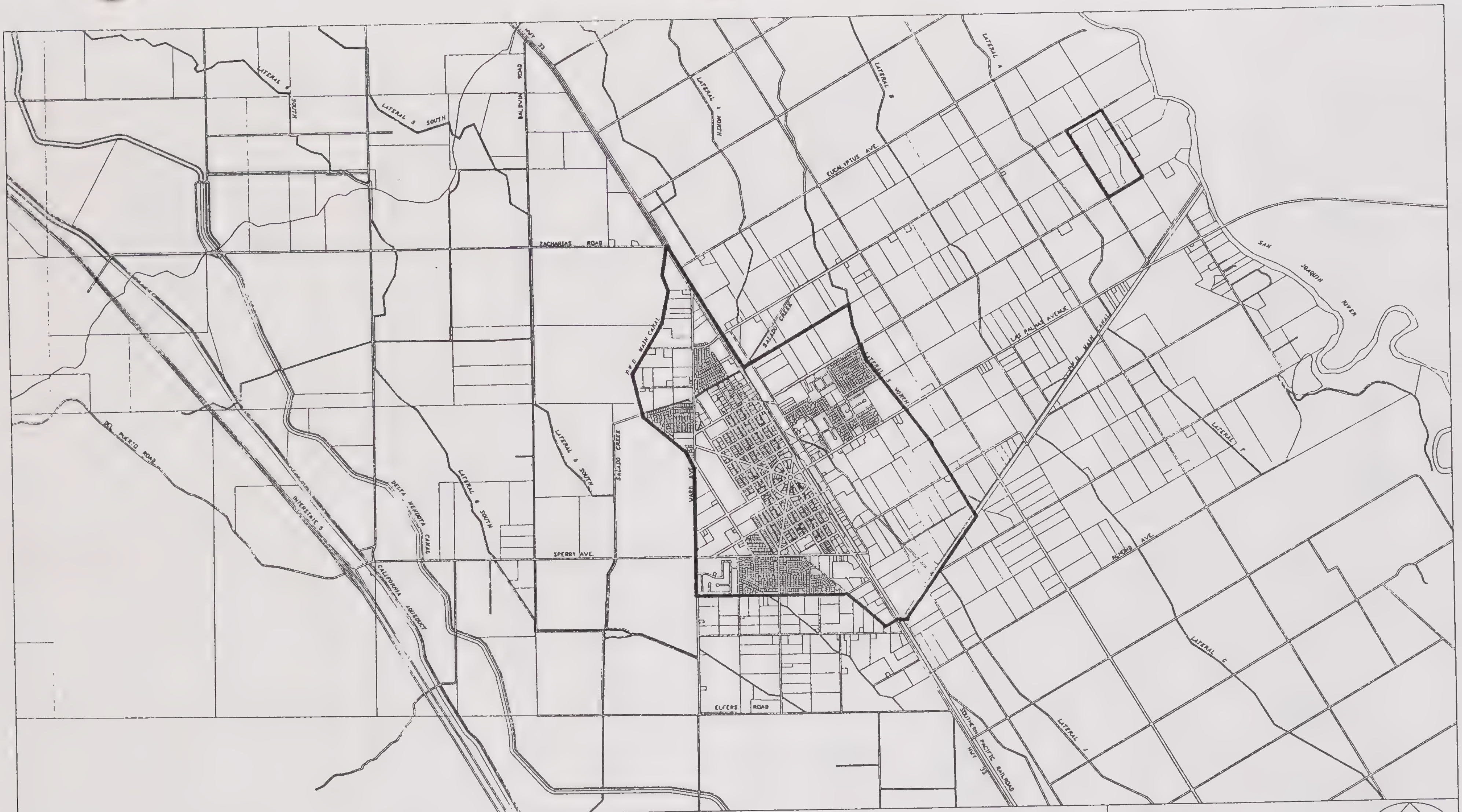


Figure I-9

LAFCO SPHERE OF INFLUENCE

Source: Stanislaus County Local Agency Formation Commission, December 1984.

Patterson Planning Area

The County *General Plan* designates all unincorporated lands in the Study Area for agricultural uses, with two exceptions. Unincorporated lands designated by the City's existing (1978) General Plan are designated as Urban Transition. An small area east of the Interstate 5 offramp, straddling Sperry Road to the north and south between the California Aqueduct and the Delta-Mendota canal is designated for Highway Commercial. A description of these land use categories and applicable County zoning follows.

- The *Stanislaus County General Plan* **Agricultural** designation establishes agriculture as the primary use, but allows for low density dwelling units, limited industrial uses, and other uses which by their unique nature are not compatible with urban uses, provided they do not conflict with the primary use. The agricultural designation is also consistent with areas the *Stanislaus County General Plan* has identified as suitable for open space or recreational use and for ranchettes.

  General Agriculture (A-2) zoning is found in this designation. (Formerly named "Exclusive Agriculture," the A-2 district was renamed "General Agriculture" in October 1989 to more accurately describe the inclusive A-2 regulations.) A-2 zoning can include a variety of minimum parcel sizes, from three acres in the A-2-3 zone to 160 acres in the A-2-160 zone. Most of the agricultural land in the county is zoned A-2-40, with a minimum parcel size of 40 acres. Residential density standards range from one dwelling per three acres in A-2-3 to a maximum of two dwellings per any parcel over 20 acres in the other A-2 categories.

  A-2 zoning allows for a broad variety of non-agricultural uses, including cemeteries, schools, churches, and recreational facilities such as golf courses, gun clubs, race tracks, and public stables.

  Planned Development (PD) zoning may also be permitted in the Agricultural designation provided the development does not exceed the established building intensity of the Agricultural designation.

  The *Stanislaus County General Plan* contains the following policy concerning the protection of agricultural lands:

  > *Policy 14. Uses shall not be permitted to intrude into an agricultural area if they are detrimental to continued agricultural usage of the surrounding area.*

  The County published a *Draft Agricultural Element* in December 1991 which was adopted in April 1992. Provisions of the *Agricultural Element* are discussed in the next section.

- The **Highway Commercial Planned Development** is designated for land located at freeway interchanges where it may be necessary to provide services to highway travelers. Land within this designation is zoned for Exclusive Agriculture (A-2) until rezoned to Planned Development (PD). Population density and building intensity will be determined on a case-by-case basis.

  Primary uses within the Highway Commercial Planned Development designation are:

  - Truck stops
  - Restaurants
  - Motels
  - Service stations
  - Overnight R.V. camping
  - Fruit stands

The following uses may be permitted only when accessory to the uses listed above:

- Towing service
- Minor emergency automobile repair
- Convenience market
- Wine tasting

- The **Urban Transition** designation is intended to ensure that land remains in agricultural usage until urban development consistent with a city's general plan designation is approved. Generally, urban development will only occur upon annexation to a city. Development may be permitted prior to annexation provided the development is not inconsistent with the land use designation of the general plan of the affected city.

  Until Urban Transition lands within a sphere of influence are annexed, they are typically zoned General Agriculture (A-2). Planned Development (PD) zoning may also be used provided the development does not exceed the established building intensity standards. Building intensity and population density standards are the same as under the Agricultural designation.

The *Stanislaus County General Plan* contains the following policies concerning development within the unincorporated portion of a city's sphere of influence. These policies do not allow development to occur if it is inconsistent with a city's adopted general plan. These policies could, however, allow the County to approve development within Patterson's sphere of influence if the proposed development is consistent with the City's General Plan.

Policy 24. Non-residential development which requires discretionary approval and is within the sphere of influence of cities, other than Turlock, shall not be approved if it is inconsistent with the city's general plan land use designation. . . .

Policy 25. Non-residential development which requires discretionary approval and is within the sphere of influence of a city must meet the applicable development standards of the affected city.

Policy 26. Rezoning of land for residential development shall not be permitted within any city's sphere of influence, other than Turlock, prior to annexation and shall never be permitted in a city's sphere of influence if it is inconsistent with the land use designation of the general plan of the affected city. . . .

Agricultural Element

Stanislaus County published a *Draft Agricultural Element* to its *General Plan* in February 1990. The County subsequently revised the *Draft Agricultural Element* based on comments received on the February 1990; a second draft was published in December 1991 and adopted in April 1992.

As a primary objective, the *Agricultural Element* contains the following goal: "Goal Two: Preserve Our Agricultural Lands for Agricultural Uses." To achieve this goal, the *Agricultural Element* contains several policies and programs for the County's continued participation in the Williamson Act program. The *Agricultural Element* also includes the following policies concerning "Urbanization and the Conversion of Agricultural Land":

2.3. To reduce development pressures on agricultural lands, higher density development and in-filling shall be encouraged in urban and built-up areas of the County.

2.4. To the greatest extent possible, development shall be directed away from the County's most productive agricultural areas.

2.5. New areas for urban development (as opposed to expansion of existing areas) shall be limited to less productive agricultural areas.

2.6. Agricultural lands restricted to agricultural use shall not be assessed to pay for infrastructure needed to accommodate new development.

2.7. Proposed amendments to the General Plan Diagram (map) that would allow the conversion of agricultural land to non-agricultural uses shall be approved only if they are consistent with the County's conversion criteria.

Other relevant policies include those for "Expansion of Cities and Unincorporated Communities."

2.8. The County recognizes the right of cities and unincorporated communities to grow and prosper and shall not oppose reasonable requests to expand spheres of influence of cities or community services districts and sanitary districts serving unincorporated communities to accommodate growth.

2.9. In recognition that unincorporated land within spheres of influence of cities or community services districts and sanitary districts serving unincorporated communities ultimately will be urbanized, the County shall cooperate with cities and unincorporated communities in managing development in urban transition areas.

2.10. The County shall continue to encourage the upgrading of existing unincorporated communities.

2.11. The County shall discourage the expansion of spheres of influence of cities or community services districts and sanitary districts serving unincorporated communities into its most productive agricultural areas.

OTHER PLANS AND LAND USE REGULATIONS AFFECTING PATTERSON

Stanislaus County Hazardous Waste Management Plan

Under Section 25135 of the *California Health and Safety Code*, each county in California is required to prepare a countywide hazardous waste management plan which includes information about waste generation, describes existing facilities in the county, assesses the need for new and expanded facilities, analyzes potential for waste reduction, and creates programs for local hazardous waste management.

Stanislaus County is not a major hazardous waste generator; it generates approximately 12,100 tons per year, or 0.12 percent of the state's total annual hazardous waste generation of over 10 million tons. Another 52,000 tons per year may be added if the ash from the County's waste-to-energy plant is classified as a hazardous waste.

A final draft of the Hazardous Waste Management Plan is presently undergoing public review. Hazardous Waste Management Plans must be approved by a majority of the cities within the county which contain a majority of the population in the incorporated area of the county. The State Department of Health Services must give final approval to the plan before the plan becomes effective.

Integrated Solid Waste Management Plan

In September 1989, the Governor signed the Integrated Waste Management Act of 1989. This Act establishes strict mandates for local agencies to achieve a 25 percent per year reduction in solid waste disposed of by 1995 and a 50 percent reduction by 2000. The Act abolished the California Waste Management Board and created the State Integrated Waste Management and Recycling Board. The Board's duties are to review county and city source reduction and recycling elements and to make recommendations concerning state actions needed to maintain an efficient and environmentally safe solid waste management infrastructure.

Each city is required to prepare, adopt, and submit to the county a source reduction and recycling element which includes the following components:

- Waste characterization
- Source reduction
- Recycling
- Composting
- Solid waste facility capacity
- Education and public information
- Funding
- Special waste
- Household hazardous waste

Counties are required to prepare source reduction and recycling elements for unincorporated areas.

As of late 1991, the City of Patterson and Stanislaus County were in the process of preparing the Source Reduction and Recycling Element.

Each county must prepare and submit to the State Integrated Waste Management and Recycling Board a countywide integrated waste management plan which includes the cities' and county's source reduction

and recycling elements, a countywide siting element, and a summary of significant waste management problems facing the county. Counties with less than five years remaining landfill capacity shall submit by January 1, 1992, counties with five to eight years of remaining landfill capacity by January 1, 1993, and counties with more than eight years of remaining landfill capacity (this category includes Stanislaus County) by January 1, 1994. The county and a majority of the cities within the county that contain a majority of the county's incorporated population must approve the plan. The State Board shall review integrated solid waste management plans to determine if they comply with the provisions of the Act. Based on this determination, the Board shall approve or disapprove the plan.

Each countywide integrated waste management plan must be reviewed, revised if necessary, and submitted to the State Board every five years.

Airport Land Use Plan

Under various provisions of state law, cities and counties are required to either bring their general plans and any specific plans into compliance with the adopted County Airport Land Use Commission (ALUC) plan for the territory around designated airports or to make specified findings. The purpose of the airport land use plan and the consistency requirement is to eliminate or minimize development around airports that would be subject to significant levels of aircraft noise or would pose a safety hazard to aircraft of occupants of the development in the event of a plane crash.

In 1978, the Stanislaus County ALUC adopted an Airport Land Use Commission Plan for five airports under its jurisdiction. As part of the plan, the ALUC established planning area boundaries around each airport and developed land use plans within these boundaries, including recommending compatible land uses and recommending height restrictions and building standards for soundproofing within the planning boundaries. Portions of two airport planning boundaries fall within the Patterson Study Area: Patterson Airport and Crows Landing Naval Auxiliary Landing Field.

The ALUC plan divides the airport planning regions into four areas: 1) airport building area; 2) other airport property; 3) approach and transitional surfaces; and 4) other lands within the airport planning boundary. Figure I-10 shows the ALUC planning boundaries within the Study Area for Patterson Airport and Crows Landing Naval Auxiliary Landing Field. Table I-4 lists the compatible, prohibited, and conditionally approvable uses for each area within the airport planning boundaries, as defined by the ALUC plan.

In August of 1983, the ALUC evaluated City and County general plan designations and zoning for consistency with the airport land use plans. The ALUC deemed the Patterson General Plan and zoning and the Stanislaus County General Plan and zoning to be compatible with the airport land use plans for Patterson Airport and Crows Landing Naval Auxiliary Landing Field. All lands under County jurisdiction surrounding Patterson Airport are subject to a height limiting ordinance. There is no adopted height limiting ordinance surrounding the Crows Landing Naval Auxiliary Landing Field.

TABLE I-4

AIRPORT LAND USE COMPATIBILITY LISTING

Uses	AREA[1] 1	2	3	4
Agricultural uses				
Truck and specialty crops	O	O	O	O
Field crops	O	O	O	O
Pasture and rangeland	O	O	O	O
Orchard and vineyards	X	X	O	O
Dry farm and grain	O	O	O	O
Tree farms, landscape nurseries, and greenhouses	O	O	C	O
Fish farms	X	X	O	O
Feed lots and stockyards	X	X	C	O
Poultry farms	X	X	C	O
Dairy farms	X	X	C	O
Natural uses				
Fish and game reserves	X	X	O	O
Land reserves and open space	O	O	O	O
Flood and geologic hazard areas	O	O	O	O
Waterways	O	O	O	O
Residential and Institutional				
Rural residential (10-acre lots or more)	X	X	C	O
Suburban residential (20,000 sf to 10 acre lots)	X	X	X	O
Urban single family (under 20,000 sf lots)	X	X	X	O
Multi-family	X	X	X	O
Mobilehome parks	X	X	X	O
Hospitals	C	C	X	O
Churches	X	X	X	O
Recreational				
Golf course	O	O	O	O
Parks	O	O	O	O
Playgrounds and picnic areas	O	O	O	O
Athletic fields	X	X	X	O
Riding stables and trails	X	X	O	O
Marinas	O	O	O	O
Tennis courts	O	O	O	O
Outdoor theaters	X	X	X	O
Swimming pools	O	O	O	O
Fairgrounds and race tracks	X	X	X	O

[1]Area 1 - Airport Building Area
Area 2 - Other Airport Property
Area 3 - Approach and Transitional Surfaces
Area 4 - Other Lands Within Airport Planning Boundary

O = COMPATIBLE X = PROHIBITED C = CONDITIONALLY APPROVABLE

Continued on next page.

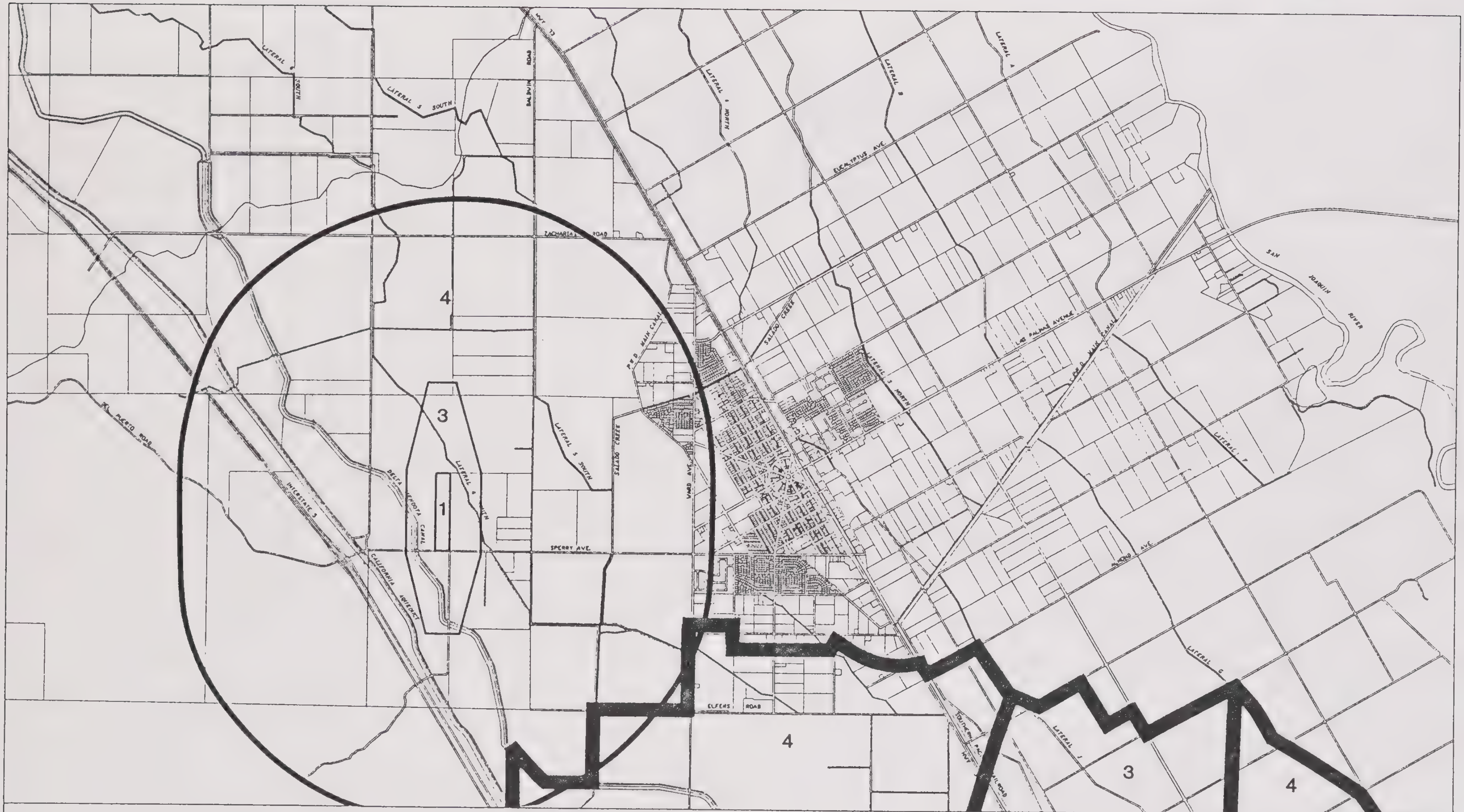


Figure I-10

AIRPORT LAND USE DESIGNATIONS

Patterson Airport — Crows Landing Naval Auxiliary Landing Field

(See Table 1-4 for permitted uses)

Source: Stanislaus County Airport Land Use Commission, 1978.

N

Patterson Planning Area

TABLE I-4 (Continued)

AIRPORT LAND USE COMPATIBILITY LISTING

Uses	AREA 1	2	3	4
Commercial uses				
Aircraft sales and repairs	O	O	O	O
Flying schools	C	C	C	O
Hotels and motels	C	C	X	O
Shopping centers	C	C	X	O
Banks	C	C	X	O
Gas stations	C	C	X	O
Auto storage and parking	O	O	O	O
Office buildings	C	C	C	O
Theaters and auditoriums	X	X	X	O
Public buildings	C	C	C	O
Taxi, bus, and terminals	O	O	X	O
Memorial parks	X	X	X	O
Pet cemeteries	X	X	X	O
Restaurants and food take-outs	C	C	C	O
Retail stores	C	C	C	O
Truck terminals	O	O	O	O
Other service uses	C	C	C	O
Industrial				
Research laboratories	C	C	C	O
Warehouses	O	O	O	O
Aircraft factories	O	O	C	O
Air freight terminals	O	O	O	O
Non-air-related manufacturing	C	C	C	O
Rail sidings	O	O	O	O
Other transportation parks	O	O	O	O
Petroleum and chemical products bulk storage	C	C	C	O
Utilities				
Reservoirs	C	C	O	O
Water treatment	C	C	O	O
Sewage disposal	C	C	O	O
Electrical plants	C	C	C	O
Power lines	C	C	C	O

O = COMPATIBLE **X = PROHIBITED** **C = CONDITIONALLY APPROVABLE**

Source: *Airport Land Use Commission Plan*, Stanislaus County Airport Land Use Commission, August 1978.

Concerned Regulatory Agencies

Several governmental agencies exercise some level of regulatory control over land use decisions in Patterson. The following paragraphs discuss those agencies which have some sort of permitting authority.

- **The San Joaquin Unified Air Pollution Control District (APCD)** is responsible for granting two types of permit which pertain to land use. The first, the Authority to Construct, is required for any proposal to construct, modify, or operate a facility or equipment that will emit pollutants from a stationary source in the atmosphere. The second, the Permit to Operate, must be obtained from the APCD to ensure compliance with requirements implemented with the Authority to Construct. The Permit to Construct includes a renewal requirement which creates an ongoing monitoring program.

- **The California State Reclamation Board** maintains jurisdiction over all Federal Flood Control Projects and levees which are either part of such projects or which may affect such projects. The Reclamation Board is authorized to grant Encroachment Permits for any activity proposed along or near flood control levees, including changes in land use, construction, earthwork, or removal of vegetation.

- **The California Department of Fish and Game** has jurisdiction over all "waters of the state," including any lakes, streams, or rivers containing fish or wildlife resources. The Department of Fish and Game has authority over two permitting processes. Streambed Alteration Agreements are required for projects which alter the flow of any lake, stream or river in the state. Suction Dredging Permits are required for projects involving suction or vacuum dredging activities in state waterways.

- **The Central Valley Regional Water Quality Control Board (RWQCB)** maintains jurisdiction over discharges into all rivers, creeks, streams, and canals in the area, and regulates discharges to groundwater. Any project that will discharge wastes into any surface waters must obtain waste discharge requirements from the RWQCB. These requirements serve as the Federal National Pollutant Discharge Elimination System (NPDES) Permit.

- **The California Department of Transportation (Caltrans)** has authority over all State highway and freeway right-of-ways, including easements, and undeveloped rights-of-way which have been acquired in anticipation of future construction. Any project which proposes to construct a road connection or perform earthwork within a State highway of freeway must obtain an Encroachment Permit from Caltrans.

- **The United State Army Corps of Engineers**, pursuant to the Rivers and Harbors Act, the Army Corps maintains jurisdiction over all navigable waterways (including nonnavigable streams, creeks, marshes, and diked lands) and requires a permit for any work within these waterways.

Reviewing Agencies

In addition to those regulatory agencies with direct permitting authority, several local, state, and federal agencies are involved with the permit and environmental process. These agencies, while not issuing permits, have particular areas of expertise or maintain certain review authority and may comment on various aspects of project development.

- **The California Department of Water Resources (DWR)** reviews projects and comments in relation to State Water Project facilities such as the Delta Cross Channel and the California Aqueduct. The DWR also coordinates CEQA and NEPA comments for many departments within the State Resources Agency.

- **The California Department of Parks and Recreation** reviews development projects in relation to State recreation facilities The Department has also prepared recreation plans covering a large area which would be used in the review of projects, while the **State Office of Historic Preservation**, within Parks and Recreation, is the designated State Historic Preservation Office (SHPO) and monitors State and federal registered historical resources as well as other statutory responsibilities.

- **The State of California Native American Heritage Commission** reviews projects and comments on potential impacts to Native American archeological resources. The Commission is directly involved with a procedure if Native American artifacts or remains are discovered during construction activities.

- **The California Department of Fish and Game**, as a trustee agency, reviews projects and comments on potential impacts to fish and wildlife resources in general, and identifies potential impacts to endangered or threatened plant or animal species under the California Endangered Species Act. The Department is required to issue a written finding indicating whether a proposed project would "jeopardize" the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of habitat essential to the continued existence of the species. If the Department makes this "jeopardy" finding, it is then required to develop "reasonable and prudent alternatives" to conserve the endangered or threatened species.

- **The California State Clearinghouse**, within the Office of Permit Assistance, is the point of contact for review of environmental documents where one or more State agencies will be responsible or trustee agency. The Clearinghouse circulates environmental documents among State agencies, coordinates review, and forwards comments to the lead agency.

- **The United States Bureau of Reclamation** maintains authority over federal water project facilities, including and the Federal Flood Control Project Levees and reviews development projects for potential effects to these facilities.

- **The United States Environmental Protection Agency (EPA)** has review authority over environmental documents that are prepared and circulated pursuant to the National Environmental Protection Act (NEPA). The EPA can comment on the draft EISs, and NEPA procedures require the filing of final EISs with the EPA. The EPA has authority over development projects pursuant to Section 404 of the Clean Water Act, which overlaps the Army Corps of Engineers authority. Generally, the EPA reviews Department of Army Permits for compliance with guidelines for implementing Section 404 requirements. The EPA can, in rare cases, override an Army Corps of Engineers decision on a Department of Army permit in order to prohibit discharges into waterways.

- **The United States Fish and Wildlife Service** must be consulted on all federal projects, such as the Army of Corps of Engineers--Department of Army Permit, pursuant to the Fish and Wildlife Coordination Act. The Service comments on potential project effects on "endangered or threatened" plant and animal species under the Federal Endangered Species Act. In reviewing a project, the Fish

and Wildlife Service could issues a "jeopardy" determination and would propose reasonable alternatives to the permitting agency similar to the State Department of Fish and Game process. The Fish and Wildlife Service also comments generally on potential effects on fish and wildlife resources.

- **The National Marine Fisheries Service** is also consulted on all Department of Army Permits as part of the Fish and Wildlife Coordination Act. The National Marine Fisheries Service reviews development projects in relation to overall effects on anadromous fish such as salmon, striped bass, and steelhead. The Service also considers any endangered or threatened anadromous fish which may exist in the area.

PROPOSED MAJOR REGIONAL DEVELOPMENTS

The I-5 corridor between I-5/580 and S.R. 152, generally western San Joaquin Valley from Tracy to Los Banos, has been the focus of significant development interest during the last two years. Several "new towns" have been proposed, three in Stanislaus County, and two in San Joaquin County. In addition, major developments for existing West Side cities and unincorporated communities have been proposed. Table I-5 summarizes the major development projects proposed in the region as of February 1992. The three new town proposals in Stanislaus County are described below. Their locations are shown in Figure I-11.

Lakeborough

Lakeborough, formerly known as Dos Ranchos, is proposed for 4,300 acres west of the community of Crows Landing. The new town would be located immediately west of Interstate 5, bordering on the waste-to-energy plant, to ultimately accommodate a population of 30,000. The plan includes 10,000 homes, 764 acres of commercial and industrial development, 944 acres of open space, two 80-acre lakes, a regional mall, equestrian trails, an 18-hole golf course, and a nature preserve. The developers have secured water rights from the Delta-Mendota Canal by converting existing agricultural rights to domestic uses. At least one new freeway interchange is planned as part of the project. An environmental impact report on the project was released in May 1990.

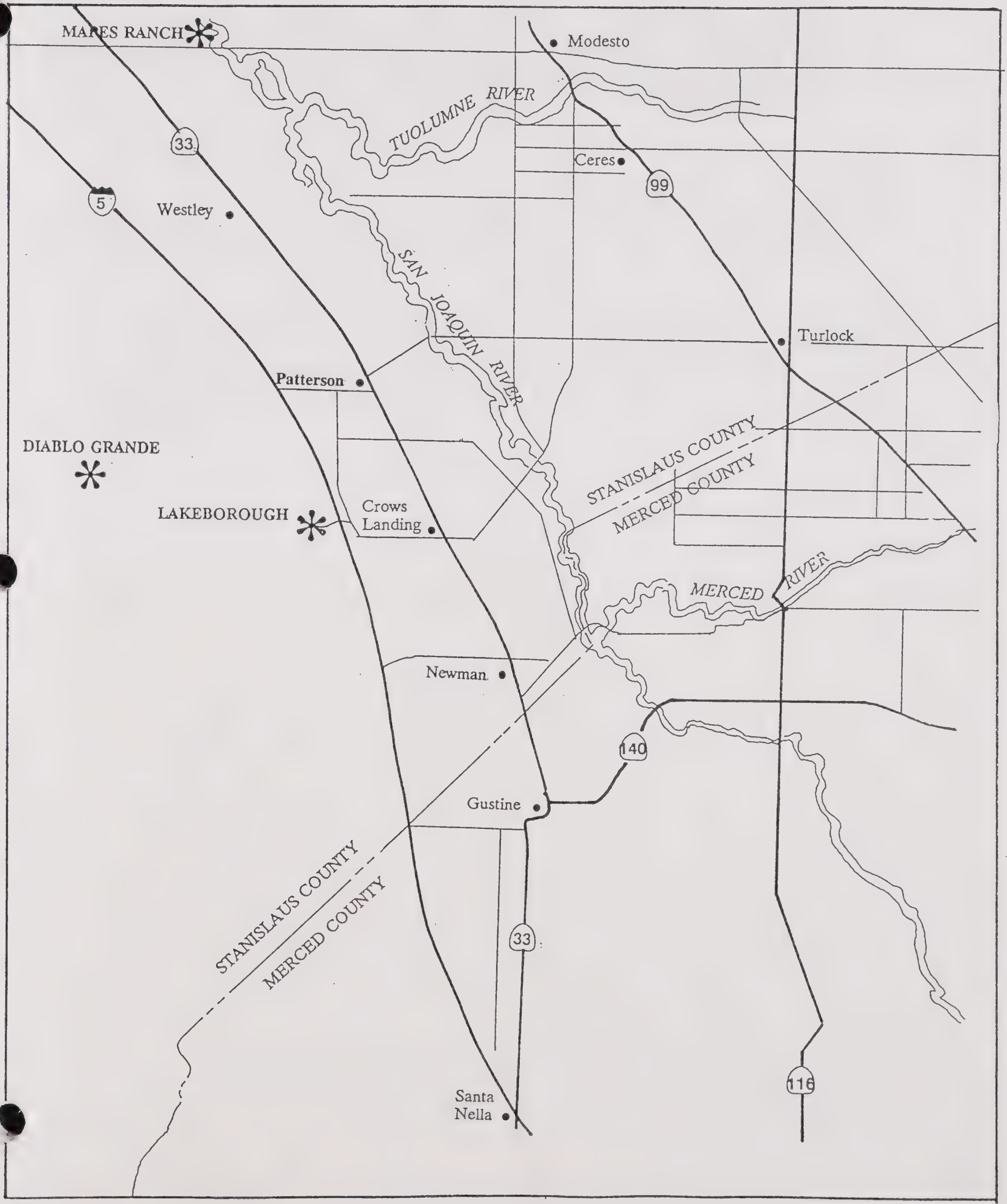
Diablo Grande

Diablo Grande is planned in the foothills southwest of Patterson, several miles west of Interstate 5 on Oak Flat Road. The project encompasses approximately 30,000 acres, although much of the area would remain undeveloped. Plans for the community include five golf courses, upscale condominiums, and 10-acre homesites. Other amenities would include equestrian trails and hotel and restaurant accommodations for tourists and corporate executives attending retreatlike conferences. Proponents are also considering the development of a vineyard and winery.

The project was initially proposed in 1988, but was formally reintroduced with new backers in May of 1990. Development of the project is dependent on acquiring water to serve the project. As of February 1992, the project is in administrative draft form.

FIGURE I-11

PROPOSED NEW TOWNS



Mapes Ranch

Mapes Ranch is proposed on State Route 132 at the San Joaquin River. The proposal is similar in size and scope to Lakeborough; the new town would accommodate a population of 30,000 with significant employment-generating uses. Mapes Ranch had also been considered as the site for a new University of California. No project application has been submitted to the County as of February 1992.

Other West Side Communities

Major developments have also been proposed in the city of Los Banos and in the unincorporated community of Santa Nella in Merced County. Substantial residential development and commercial development has been proposed in Santa Nella, as summarized in Table I-5. Merced County plans to prepare a Specific Plan for Santa Nella.

Faced with similar growth pressures as Patterson, the City of Newman is also updating its general plan. Newman's *Draft General Plan* was released in Fall 1991, and proposes a total population of 22,000 to 25,000 by 2011. Significant residential development has been proposed in the unincorporated Stanislaus County community of Grayson. In addition to the two new town proposals in its vicinity (Mountain House and Grupe/Sassco), the City of Tracy in San Joaquin County has also experienced major development interest.

TABLE I-5

PROPOSED MAJOR DEVELOPMENTS IN THE REGION
As of February 1992

Project Name	Location	Proposed Residential (DUs)	Proposed Commercial/ Industrial	Other Proposed Amenities	Status
Western Stanislaus County					
Lakeborough	West of I-5 at Fink Road, west of Crows Landing	10,000 DUS	764 acres commercial and industrial, including regional mall	Two 80-acre lakes golf course equestrian trails	Submitted application to County Draft EIR released in May 1990.
Diablo Grande	7 miles west of I-5, west of Patterson	5,000 DUS	Hotel and conference center	5 golf courses winery and vineyard	Application in process as of February 1992.
Mapes Ranch	S.R. 132 at San Joaquin River	10,000 SF DUs	1 million sf commercial 2.3 million sf industrial	Proposed new University of California site	No project application submitted to County.
Grayson Park	1 mile north of Grayson on River Rd.	719 SF DUS			Project approved.
Patterson Gateway	2 miles west of Patterson at I-5 and Sperry Avenue		38 acres highway commercial 12 acres business park		Submitted application to County.
City of Newman	11 miles south of Patterson on Highway 33	8,025 DUs	143 acres commercial/office 650 acres industrial		Draft General Plan published in Fall 1991.

DUs = Dwelling Units; SF = Single-Family, MF = Multi-Family, sf = square feet

Continued

TABLE I-5 (Continued)

PROPOSED MAJOR DEVELOPMENTS IN THE REGION
As of February 1992

Project Name	Location	Proposed Residential (DUs)	Proposed Commercial/ Industrial	Other Proposed Amenities	Status
Merced County					
Santa Nella	I-5 and SR 33	2,496 SF DUs	230 acres commercial and industrial	322 acre VA National Cemetery; 210 space expansion of RV park	Total approved projects and projects with submitted applications
		840 SF DUs, 360 MF DUs	35 acres commercial and industrial	50 acre equestrian center	No applications submitted.
Los Banos	SR 33, SR 152, SR 165, 5 miles east of I-5	4,202 SF DUs 111 MF DUs	32 acres industrial 10 acre commercial center		
San Joaquin County					
Mountain House	NW of Tracy, north of I-205	10,128 DUs	130 acres commercial 85 acres office/R&D 220 acres industrial		Application submitted to County. Undergoing hearings on project.
Grupe/Sassco Development	Near Tracy, I-580 at Corral Hollow Rd.	5,447 SF DUs 3,111 MF DUs	1 million sf commercial 54 acres highway commercial 3.1 million sf commercial/ /office/industrial 3.5 million sf light industrial	235 acre golf course 20 acre equestrian center	No application submitted.
Gateway Business Park	Tracy - I-580 at Patterson Pass Rd.		185 acres warehouses 20 acres industrial		Project approved.

Sources: Stanislaus County, *Lakeborough Draft Environmental Impact Report: Specific Plan, General Plan Amendment, and Rezoning*, May 1990; Stanislaus County, *Patterson Gateway General Plan Amendment Application*, July 1990; San Joaquin County, *Mountain House New Town General Plan Amendment Application, Project Description and Environmental Assessment*, June 1990; *Patterson Irrigator*, May 1990, August 1990; *West Side Index*, August 1990.

FINDINGS

- The *1978 General Plan* has been the official development guide for the City of Patterson for ten years. The existing plan is outdated, and does not reflect the growth and changes which have taken place in Patterson in the 1980s.

- A comparison of the City's zoning map with the *1978 General Plan* map reveals that there are no notable inconsistencies between them.

- About 70 percent of incorporated lands in the city is zoned for residential uses, 12 percent is zoned for industrial uses, and 7 percent for commercial.

- Over 90 percent of the land in the Study Area is devoted to agricultural uses. For non-agricultural land, 41 percent is devoted to residential uses, 26 percent for public and private institutional uses (schools, parks, churches), 10 percent is devoted to industrial uses, 5 percent to commercial uses, and 18 percent is vacant.

- The City's existing sphere of influence was adopted in 1984.

- The *Stanislaus County General Plan* provides for agriculture use throughout most of the unincorporated Study Area. The County's Urban Transition designation provides for compatibility and consistency between the City and County General Plans, but also permits the County to approve development within Patterson's sphere of influence without annexation to the city, as long as it is consistent with the General Plan.

- Almost all of the unincorporated Study Area is zoned for Urban Transition or Agriculture under the *County General Plan*, with the exception of a small area next to Interstate 5 zoned for Highway Commercial.

- The Study Area includes lands within the boundaries of two airport land use planning areas: Patterson Airport and Crows Landing Naval Auxiliary Landing Field. Future development in these regions may be restricted by noise and height limitations.

- A number of other agencies have regulatory authority or responsibility to review actions in the Study Area.

- The I-5 corridor between I-5/580 and S.R. 152, generally the western San Joaquin Valley from Tracy to Los Banos has been the focus of substantial development interest during the last two years. Several "new towns" have been proposed. In addition, major developments for existing West Side cities and unincorporated communities have been proposed.

PERSONS CONSULTED

Garcia, Ted, Program Manager, Hazardous Waste Management Plan, Department of Environmental Resources, Stanislaus County

Hopper, Leslie, Associate Planner; Project Manager, Agricultural Element, Department of Planning and Community Development, Stanislaus County.

Sellers, Chip, Assistant Planner, Department of Planning and Community Department, Stanislaus County

Simpson, Rod R., City Planner, City of Patterson

BIBLIOGRAPHY

"A Town's Founding," *The Gateway (Patterson Township Historical Society Bulletin)*, Volume 1, Number 1, June 1978.

City of Patterson, *General Plan*, 1978.

City of Patterson, *Preliminary General Plan Environmental Impact Report*, 1985.

Del Puerto Hospital District, *Twenty-Year Development Plan for Del Puerto Hospital*, Prepared by Cattaneo & Stroud, Burlingame, California, 1985.

Stanislaus County, *Final Draft Hazardous Waste Management Plan*, August 1988.

Stanislaus County, *General Plan*, June 1987.

Stanislaus County, *General Plan Support Documents*, 1987.

Stanislaus County Airport Land Use Commission, Airport Land Use Commission Plan, August 1978.

Memo, Airport Land Use Commission from ALUC Staff, August 13, 1983.

Stanislaus County Local Agency Formation Commission, *Sphere of Influence for the City of Patterson* (Resolution No. 84-41), 1984.

CHAPTER II

HOUSING

CHAPTER II

HOUSING

INTRODUCTION

Under the requirements of state law, every city and county in California must prepare a housing element as part of its general plan. The housing element must document in detail the existing housing stock and existing and projected housing needs of the jurisdiction. This chapter responds to these requirements by presenting a profile of Patterson's existing housing, assessing existing and projected needs, analyzing resources available to meet these needs, and reviewing governmental and non-governmental constraints on the production of affordable housing. Appendix B to this report summarizes special state housing requirements.

Where available, 1990 Census data was used for this analysis. Not all the 1990 Census data had been released by the publication of this document, therefore, in some cases, 1980 Census data is used where more recent information is not available.

HOUSING STOCK PROFILE

Housing Stock Growth and Composition

Before 1980, Patterson's housing stock was composed principally of single-family homes. Table II-1 and Figure II-1 show how this became increasingly so throughout the 1980s, as single-family units came to represent more than three-quarters (80.3 percent) of the city's total units in 1990. This total is higher than Stanislaus County's 73.5 percent and significantly higher than the statewide total of 60.7 percent. A corresponding comparison of multi-family structures with at least five units shows that Patterson, at 5.6 percent, falls below Stanislaus County's 13.4 percent and far below California's 26.7 percent.

TABLE II-1

HOUSING STOCK COMPOSITION
City of Patterson
1980 to 1990

Year	Total	Single Family	% of Total	2-4 Units	% of Total	5+ Units	% of Total	Mobile-homes	% of Total
1980	1,351	952	70.5%	131	9.7%	192	14.2%	76	5.6%
1981	1,447	991	68.5%	139	9.6%	207	14.3%	110	7.6%
1982	1,429	968	67.7%	257	18.0%	113	7.9%	91	6.4%
1983	1,455	976	67.1%	257	17.7%	113	7.8%	109	7.5%
1984	1,483	1,002	67.6%	257	17.3%	113	7.6%	111	7.5%
1985	1,505	1,023	68.0%	257	17.1%	113	7.5%	112	7.4%
1986	1,575	1,034	65.7%	257	16.3%	153	9.7%	131	8.3%
1987	1,848	1,294	70.0%	261	14.1%	153	8.3%	140	7.6%
1988	2,122	1,587	74.8%	261	12.3%	153	7.2%	121	5.7%
1989	2,392	1,849	77.3%	261	10.9%	153	6.4%	129	5.4%
1990	2,732	2,194	80.3%	261	9.6%	153	5.6%	124	4.5%

Source: California Department of Finance

FIGURE II-1

HOUSING STOCK COMPOSITION
City of Patterson
1980 to 1990

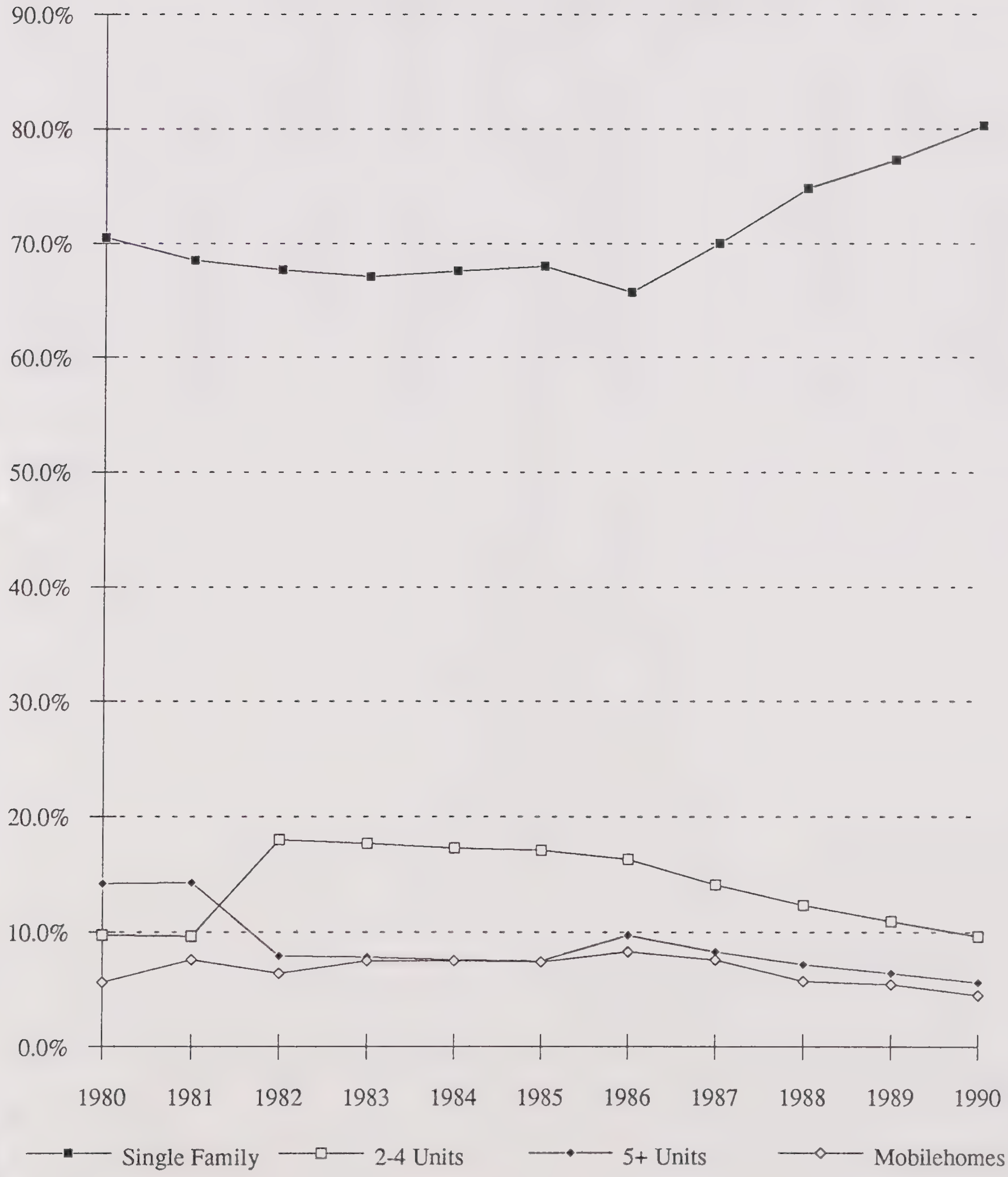


Table II-2 shows, however, that Patterson's housing stock composition is similar to other cities in Stanislaus County. According to Table II-2, Patterson had the lowest ratio of large multi-family dwellings (five units of more) to total multi-family dwellings of any city or county area in Stanislaus County.

TABLE II-2

HOUSING STOCK COMPOSITION
Stanislaus County Cities, County, State
1990

	Total	Single Family	% of Total	2 - 4 Units	% of Total	5 + Units	% of Total	Mobile-Homes	% of Total
Ceres	9,178	6,780	73.9%	411	4.5%	1,364	14.9%	623	6.8%
Hughson	1,071	905	84.5%	8	.7%	87	8.1%	71	6.6%
Modesto	62,032	45,171	72.8%	5,007	8.1%	10,210	16.5%	1,644	2.6%
Newman	1,436	1,218	84.8%	73	5.1%	121	8.4%	24	1.7%
Oakdale	4,448	3,439	77.3%	409	9.2%	469	10.5%	131	2.9%
Patterson	**2,732**	**2,194**	**80.3%**	**261**	**9.5%**	**153**	**5.6%**	**124**	**4.5%**
Riverbank	2,602	1,977	76.0%	145	5.6%	288	11.1%	192	7.4%
Turlock	15,842	10,164	64.2%	1,477	9.3%	3,642	23.0%	559	3.5%
Waterford	1,431	1,139	79.6%	102	7.1%	124	8.7%	66	4.6%
Stanislaus County	136,159	100,058	73.5%	9,775	7.2%	18,226	13.4%	8,100	5.9%
State	11,206,393	6,801,267	60.7%	921,857	8.2%	2,993,332	26.7%	489,937	4.4%

Source: California Department of Finance; J. Laurence Mintier & Associates

The land use survey conducted in Fall 1990 also estimated the number of housing units in the city. Table II-3 shows the survey results.

TABLE II-3

LAND USE SURVEY DWELLING UNIT ESTIMATES
City of Patterson
Fall 1990

Category	Units*	% of Total
Single-Family	1,397	68.1
Multi-Family, 2 to 4 Units	46	2.3
Multi-Family, 5 or More Units	312	15.2
Public Housing	156	7.6
Mobilehomes	122	6.0
Other	26	1.3
Total	**2,050**	**100.0**

* The City's land use inventory also estimated that there were approximately 338 dwelling units in the unincorporated Planning Area.

Source: City of Patterson Land Use Inventory, Fall 1990

Table II-4 compares Patterson's population and housing stock growth between 1980 and 1990. As the table indicates, total growth in the number of housing units in Patterson has roughly paralleled population growth over the 10-year period, although housing has lagged slightly behind population growth. Table II-4 shows that Patterson's overall housing stock has grown at a relatively low rate until 1987 when it experienced a dramatic 17.3 percent increase; every year since 1987, Patterson has experienced double-digit growth. County growth rates were comparatively low during the same period, i.e., 5.1 percent in 1987 declining to 4.8 percent in 1990. Patterson's dramatic housing stock growth is attributable almost exclusively to residential demand created by commuters from Bay Area employment centers.

TABLE II-4

POPULATION AND HOUSING UNIT GROWTH: ANNUAL PERCENTAGES
Patterson and Stanislaus County
1980 to 1990

	Patterson				Stanislaus County			
Year	Population	Annual Growth	Housing Units	Annual Growth	Population	Annual Growth	Housing Units	Annual Growth
1980	3,908		1,351		265,900		102,472	
1981	4,145	6.1%	1,447	7.1%	271,916	2.3%	104,789	2.3%
1982	4,400	6.2%	1,429	-1.2%	278,989	2.6%	107,106	2.2%
1983	4,411	0.3%	1,455	1.8%	286,110	2.5%	108,255	1.1%
1984	4,633	5.0%	1,483	1.9%	293,113	2.4%	109,812	1.4%
1985	4,783	3.2%	1,505	1.5%	299,996	2.3%	112,010	2.0%
1986	4,973	4.0%	1,575	4.7%	309,276	3.1%	115,308	2.9%
1987	5,695	14.5%	1,848	17.3%	320,645	3.7%	121,234	5.1%
1988	6,702	17.7%	2,122	14.8%	333,199	3.9%	125,349	3.4%
1989	7,574	13.0%	2,392	12.7%	347,506	4.3%	129,955	3.7%
1990	8,689	14.7%	2,732	14.2%	369,027	6.2%	136,159	4.8%
1980-1990		8.3%		7.3%		3.3%		2.9%

Source: California Department of Finance; J. Laurence Mintier & Associates

Housing Tenure

Tenure refers to the distinction between owner and renter households or housing units. Table II-5 shows how Patterson's housing units were distributed between rental and ownership units in 1990. It should be noted that the numbers in the table reflect only occupied units.

TABLE II-5

HOUSING TENURE
Patterson, Stanislaus County, California
1990

	Occupied Rentals	% of Total	Occupied Ownership	% of Total
Patterson	810	31.6	1,756	68.4
Stanislaus County	49,246	39.3	76,129	60.7
California	4,607,263	48.8	5,773,943	51.2

Source: U.S. Bureau of the Census, 1990

As Table II-5 indicates, in 1990, Patterson had a higher percentage of renters to owners than Stanislaus County and California.

Vacancy Rates

The vacancy rate can be used as both an indicator of unused housing stock and as a measure of consumer opportunity for mobility and choice in living accommodations. The gross vacancy rate is a measure of vacant units as a percentage of the total housing stock. The California Department of Finance (DOF) annually estimates gross vacancy rates for all cities and counties in the state. Table II-6 summarizes vacancy rates for Patterson and Stanislaus County for the years 1981 to 1990.

As a rule of thumb, an overall vacancy rate of 4.5 percent to 5.0 percent indicates a market reasonably well balanced between supply and demand. High demand and short supply may result in continued use of units which are overcrowded, unsafe, unsanitary, or otherwise unsuitable for residential use. It also results in high prices and rents which most severely affect lower income households, people on fixed incomes, families with children, and other special-need groups. Overcrowding and discrimination are also more likely to occur when the rental vacancy rate is low.

TABLE II-6

VACANCY RATES
Patterson and Stanislaus County
1981 to 1990

Year	Patterson	Stanislaus County
1981	7.0	7.8
1982	8.6	7.8
1983	4.5	7.9
1984	2.6	7.4
1985	2.5	7.2
1986	3.0	5.9
1987	6.1	7.4
1988	4.4	7.1
1989	4.3	6.3
1990	4.6	5.9

Source: California Department of Finance

As Table II-6 shows, Patterson's vacancy rate fluctuated relatively dramatically between 1981 and 1990. This fluctuation is, in part, attributable to the amount of new housing construction which took place during this period. Significant development of new housing can present problems with the tabulation of vacancy rates because of the lag time between the construction of the units and the occupation of the units. As a result, units not yet available for occupancy may be counted in the city's total unit count. Patterson's 1990 vacancy rate was 4.6 percent.

Household Size and Overcrowding

An overcrowded housing unit is defined as one in which more than one person per room (excluding bathrooms and kitchens) reside. According to the 1990 Census, 18.6 percent of Patterson's occupied housing units were overcrowded. This was significantly higher than either the countywide rate of 7.6 percent and the statewide rate of 12.3 percent.

By tenure, it is obvious that overcrowding is a bigger problem among renters in Patterson. While only 8.5 percent of the owner-occupied units were overcrowded, 40.5 percent of the renter-occupied units were overcrowded.

Population Per Household

The California Department of Finance provides annual estimates of population per household. Table II-7 shows DOF's estimates for the years 1981 through 1989 and Census data for 1990. As Table II-7 indicates, Patterson's household size has remained consistently higher than the county's throughout the 1980s.

TABLE II-7

POPULATION PER HOUSEHOLD
Patterson and Stanislaus County
1981 to 1990

Year	Patterson	Stanislaus County
1981	3.08	2.78
1982	3.15	2.79
1983	3.17	2.84
1984	3.20	2.84
1985	3.26	2.85
1986	3.25	2.81
1987	3.28	2.82
1988	3.30	2.82
1989	3.30	2.81
1990	3.36	2.96

Source: California Department of Finance; U.S. Census Bureau, 1990

Housing Condition and Age

In large part, housing conditions are a function of the age of the units. Despite the generally good visual appearance of Patterson's housing, it is likely that a significant number of units are in need of at least some minor rehabilitation, if only because of the age of the units. In 1980, 797 (59.0 percent) of the city's housing units had been constructed before 1960 (see Table II-8). By comparison, the respective county and statewide percentages were 43.5 and 48.9. The difference in the percentage of units constructed before 1940 was even more pronounced. In 1980, 26.0 percent of the units in Patterson had been built before 1940, while only 13.2 percent countywide and 14.7 percent statewide were that old.

Patterson has had very few housing demolitions and very little conversion of housing to non-residential uses. If one were to assume that five percent of the units built before 1960 according to the 1980 Census have been demolished or converted since 1980, 27.7 percent of the 1990 housing stock would be at least 30 years old, while 12.8 percent (those built before 1940) would be over 50 years old. Units of this age are likely to need some sort rehabilitation merely because of the limited life expectancy of many of the materials used in their construction.

TABLE II-8

HOUSING STOCK AGE
Patterson
1980

	Patterson	Stanislaus County	California
Before 1940	351 (26.0)	13,506 (13.2)	1,359,258 (14.7)
1940-1949	222 (16.4)	14,002 (13.7)	1,128,858 (12.2)
1950-1959	224 (16.6)	16,959 (16.6)	2,026,341 (22.0)
1960-1969	270 (20.0)	20,025 (19.6)	2,201,843 (23.9)
1970-1979	284 (21.0)	37,795 (36.9)	2,506,820 (27.2)
Total Units	**1,351 (100.0)**	**102,287 (100.0)**	**9,223,120 (100.0)**

Source: U.S. Bureau of the Census, Summary Tape File 3 (STF 3), 1980

In January 1988, the City conducted a housing quality survey in the most deteriorated areas--the south central section and a portion of the northeast section of the city. The areas surveyed are shown in Figure II-2. A total of 1,342 housing units were surveyed. The survey identified 233 substandard units (17 percent of the 1988 total). Of the substandard homes, 57 percent needed major rehabilitation, another 32 percent needed minor rehabilitation, and nine percent were deteriorated to the point where they were no longer suitable for rehabilitation but could only be repaired to alleviate health and safety hazards.

Housing Costs

The cost of housing has become an increasingly critical issue in California. Since the late 1970s, the statewide housing market has experienced dramatic price increases. Many housing markets in California (particularly in the Bay Area and Southern California) have seen rapid inflation of housing costs because of increasingly limited supplies of land suitable (or available) for residential development. Because of the vast amount of undeveloped land available in the Central Valley, housing has remained relatively inexpensive in Valley communities compared to the larger urban areas. This has generally been the case in Patterson and western Stanislaus County.

Recently, however, Patterson and other West Side communities have begun to experience pressure to develop housing to accommodate Bay Area commuters who move to the area for its affordable housing and more rural lifestyle. The increased demand for housing and higher incomes of Bay Area wage-earners have led to rising housing prices in Patterson. Local wages in Patterson and throughout Stanislaus County have not increased at the same rate as housing prices, thus it is becoming increasingly difficult for locally-employed residents to afford to purchase or rent housing in Patterson.

Patterson is not represented by any local Board or Association of Realtors, so historic and current information on housing costs is difficult to obtain. Information was obtained through discussions with local real estate agents and brokers, developers, and by reviewing real estate advertisements in back issues of the local newspaper.

Based on information provided by a local real estate office, 37 homes were sold in Patterson in 1990. The average sales prices was $128,500, while the median sales price was $125,000. Sales prices ranged from a low of $30,000 to a high of $259,000. No information on size or condition of the units or the size of the lot was included in this information.

Historic housing costs in Patterson are difficult to document for several reasons. First, no local body has accumulated housing sales information for statistical purposes. Second, given Patterson's relatively small size and its stability, only a small number of homes in Patterson were typically sold in Patterson in a given year (excluding new construction) until very recently, which does not provide a very good statistical sample.

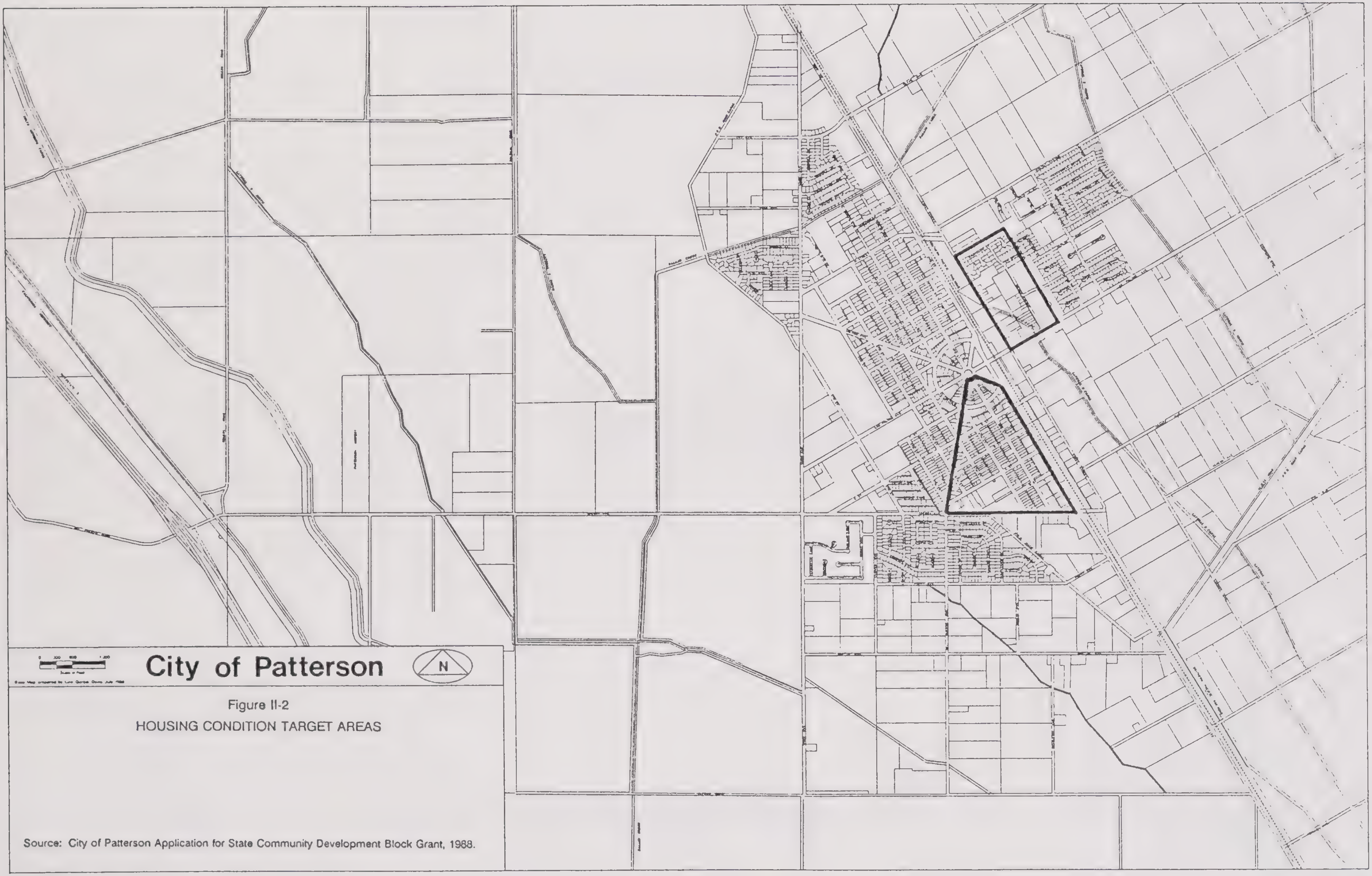


Figure II-2
HOUSING CONDITION TARGET AREAS

Source: City of Patterson Application for State Community Development Block Grant, 1988.

To provide some historical information, however, two sets of data on home prices which are somewhat relevant to the Patterson area were obtained for this analysis. Table II-12 reports data compiled by the California Association of REALTORs and shows the degree to which home prices have increased in the Central Valley since 1980. It should be noted that this data excludes Stanislaus County, as the county is not represented by a countywide association of REALTORs. This data indicates, however, general trends towards increased housing costs throughout the Central Valley. The median sales price of a home in the Central Valley was $123,177 in July of 1990--up more than 23 percent over 1989.

TABLE II-12

MEDIAN SALES PRICE OF HOMES
Central Valley
1980-1990

Year	Median* Sales Price	Percent Increase
1980	$64,066	
1981	72,005	12.4%
1982	76,826	6.7%
1983	74,675	-2.8%
1984	75,223	0.7%
1985	77,604	3.2%
1986	79,915	3.0%
1987	84,155	5.3%
1988	89,634	6.5%
1989	99,561	11.1%
1990	$123,177	23.7%
1980-1990		6.7%

*Median sales price for the month of July

Source: California Association of REALTORS; J. Laurence Mintier & Associates

Table II-13 reports data from the Modesto Association of REALTORs. Modesto is the county seat for Stanislaus County. The Modesto Association of REALTORs collects data only from the greater Modesto area, and does not include data from sales in Patterson or any communities in western Stanislaus County. This data may be useful, however, as an indicator of general trends. While data on median sales price was not available from the Modesto board, statistics on *average* sales price were available. The average sales price was $135,569.

TABLE II-13

ANNUAL AVERAGE SALES PRICE OF HOMES
Modesto Area
1985-1990

Year	Average Sale Price	Percent Increase
1985	$77,764	
1986	84,166	8.2%
1987	91,797	9.1%
1988	99,841	8.8%
1989	119,703	19.9%
1990	$135,569	13.2%
1985-1990		11.8%

Source: Modesto Association of REALTORS; J. Laurence Mintier & Associates

According to 1990 Census data, the median monthly rent paid in Patterson was in the $250 to $299 range. This data was not aggregated by unit size, however, Table II-14 indicates the average rental price of homes and apartments in Patterson in Fall 1990 based on a review of advertisements in the *Patterson Irrigator*. Given the small number of rentals available in Patterson, however, this does not provide a good scientific sample.

TABLE II-14

AVERAGE RENTAL PRICE OF HOMES AND APARTMENTS
City of Patterson
1990

Unit Size	Average Rent
1 and 2 Bedroom	$453.00
3 and 4 Bedroom	$693.00

Source: *Patterson Irrigator*, December 1989 through September 1990; J. Laurence Mintier & Associates

Income Limits

Each year the United States Department of Housing and Urban Development (HUD) publishes income limits for California to be used in conjunction with federal housing programs. These statistics are reported by metropolitan statistical area (MSA) or by county where no MSA has been defined. The California Department of Housing and Community Development (HCD) uses these figures to establish income limits for all California counties. State law requires that these HCD figures be used when defining lower-income households (see Health and Safety Code § 50079.5). Table II-15 shows the 1990 income limits for various size families in Stanislaus County.

TABLE II-15

HCD INCOME ELIGIBILITY LIMITS
County of Stanislaus
1990

Median Family Income = $32,500

	1 Person	2 Person	3 Person	4 Person
Very Low Income (50% of Median)	$11,400	$13,000	$14,600	$16,250
Lower Income (80% of Median)	$18,200	$20,800	$23,400	$26,000
Median*	$22,750	$26,000	$29,250	$32,500
Moderate (120% of Median)*	$27,300	$31,200	$35,100	$39,000

* These figures are derived from published HCD figures

Source: Department of Housing and Community Development (HCD)

Home Ownership Affordability

The income limits set by HCD provide an important point of reference for understanding the housing market in Patterson. Using these income limits, ownership affordability was analyzed for the area by calculating the price of a house in Patterson affordable to various family incomes. Table II-16 shows the results of this analysis.

TABLE II-16

OWNERSHIP AFFORDABILITY
City of Patterson
1990

County Median Family Income = $32,500

Family	Income[1]	Price of House	Down[2] Payment	Mortgage[3]
Very Low Income (50% of Median)	$14,600	$37,715	$3,771	$33,943
Lower Income (80% of Median)	$23,400	$60,447	$6,045	$54,402
Median	$29,250	$75,559	$7,556	$68,003
Moderate (120% of Median)	$35,100	$90,671	$9,067	$81,603

1 Income limit for a three-person family defined by HCD in 1990, or derived from HCD 1990 figures.
2 Assumes a 10 percent down payment.
3 Assumes 10.25 percent interest rate, 30-year, fixed-rate mortgage; also assumes 25 percent of monthly income available for mortgage payments; additional homeowner expenses, such as taxes and insurance, can require about five to seven percent of gross income for lower-and moderate-income families.

Source: Department of Housing and Community Development; J. Laurence Mintier & Associates

It should be noted that additional homeowner expenses, such as taxes and insurance, can require five to seven percent of gross income for lower- and moderate-income families. When ownership affordability is compared with the cost of housing in the Central Valley, it is evident that ownership of the median-priced house is possible only for those families that earn more than 120 percent of median family income. This does not necessarily mean there are no houses available to the moderate-income family in Patterson; by definition, there are an equal number of houses for sale that cost less than the median price as cost more. In an informal survey of housing advertised in the local newspaper, however, only three houses surveyed were affordable to the moderate-income family (i.e., cost less than $90,000). The historical data on inflation in the housing market indicates this crisis of affordability is a very recent experience, having come about since only 1988.

Rental Affordability

Rental affordability was analyzed for the area by calculating the rents in Patterson affordable to various family incomes. Table II-17 shows the results of this analysis.

Rental prices in the Patterson area are still generally affordable for families in all income categories except very low income. An informal survey of rental prices advertised in the local newspaper in Patterson found no houses or apartments affordable to the very low-income family. No doubt these families live somewhere, but their options must be severely limited. One option is to crowd more people into a single dwelling.

TABLE II-17

RENTAL AFFORDABILITY
City of Patterson
1990

County Median Family Income = $32,500*

Family	Yearly* Income	Monthly Rent at 25%
Very Low Income (50% of Median)	$14,600	$304
Lower Income (80% of Median)	$23,400	$488
Median	$29,250	$609
Moderate (120% of Median)	$35,100	$731

* Income limit for a three-person family as defined by HCD in 1990, or as derived from HCD 1990 figures.

Source: Department of Housing and Community Development; J. Laurence Mintier & Associates

---

Overpayment for Housing

Overpayment is defined as paying 25 percent or more of one's income for housing. According to the California Department of Housing and Community Development's methodology for calculating overpayment, 204 of Patterson's 1,144 households were both lower income (below 80 percent of the county median household income) and overpaying for housing in 1980. This represented 17.9 percent of the city's households. Of those households overpaying, 170 were renters and 34 were homeowners, representing 30.7 and 5.8 percent of the city's low income renters and owners, respectively. Table II-18 presents data on housing overpayment in the Patterson area, Stanislaus County, and the state for 1980.

TABLE II-18

HOUSING OVERPAYMENT
BY LOWER INCOME HOUSEHOLDS
Patterson, Stanislaus County, and State
1980

	Renters		Owners		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Patterson	170	37	34	5.8	204	17.9
Stanislaus County	13,875	42.5	5,520	11.7	19,395	24.2
California	1,153,568	35.4	438,563	11.5	1,592,131	22.5

Source: U.S. Bureau of the Census

As Table II-18 shows, Patterson had a much lower incidence of overpayment by lower income households in 1980 than either the county or the state.

Assisted Housing Due to Convert to Non-Low-Income Housing

Research indicates that there are no assisted housing units in Patterson due to convert to non-low-income housing during the next ten years.

HOUSING NEEDS

Under the state housing element requirement, housing needs are defined in three categories: existing needs, projected needs over a five year period, and special needs. As detailed above, based on the most current information available, existing housing needs in Patterson have been identified and are summarized as follows:

- Overcrowding: 478 of the city's units (1990); 8.5 percent of owner-occupied and 40.5 percent of renter-occupied;
- Substandard Units: 233 units within surveyed areas in need of at least minor rehabilitation (1988);
- Overpayment: 186 of Patterson's lower-income renters and 34 of Patterson's lower-income owners (1980);

Projected housing needs are the total additional units needed to accommodate the projected population in five years in units that are affordable, in standard condition, and not overcrowded. Projected needs, therefore, include the needs of existing residents as well as the needs of the additional households expected five years hence.

Special housing needs focus on the needs of subgroups within the population with special housing requirements. The state requires that all housing elements address the needs of the elderly, the disabled, large families, farmworkers, households headed by single mothers, and families and persons in need of emergency shelter.

Patterson's Fair Share of Projected Regional Needs

In February 1991, the Stanislaus Area Association of Governments (SAAG) published its *Housing Needs Report* for Stanislaus County and its cities, for 1990 to 1997. The projected 1990 to 1997 basic construction need defined for the county is approximately 33 percent higher than the needs projected by the California Department of Housing and Community Development (HCD) and the California Department of Finance (DOF), as there is general consensus that DOF's population projections for the county are too low and do not adequately reflect true growth trends.

Table II-19 shows SAAG's assumed housing construction needs by income category for the period from 1990 to 1997.

TABLE II-19

ASSUMED HOUSING CONSTRUCTION NEEDS
City of Patterson
1990 - 1997

Income Category	New Construction Need	Percent
Very-low income	213	23%
Low-income	164	17%
Moderate-income	202	21%
Above-moderate income	367	39%
Total	**946**	**100%**

Source: Stanislaus Area Association of Governments, *Housing Needs Report*, February 1991

Special Needs

Beyond the general housing needs documented above, state law requires that the housing element include an assessment of the housing needs of special groups within the community, including those of the disabled, the elderly, large families, farmworkers, families with female heads of households, and families and persons in need of emergency shelter.

Disabled Persons

The term "disabled" refers to a disability (physical, mental, or sensory) which prevents or precludes a person from doing work either in or outside of the home. The number of disabled persons in a community has important implications for providing certain social services, in the removal of barriers to facilities, and in the development of housing which has specialized access for disabled residents.

According to the 1980 Census, 191 of Patterson's 2,089 residents aged 16 to 64 had work disabilities. This represented 8.4 percent of the work force. A person with a work disability may have a health condition which limits the kind or amount of work which he or she can do or which prevents working at a job or business altogether. A work disability may also be defined as a health condition which limits the choice of jobs. Of those identified as having work disabilities according to the 1980 Census, 139 were prevented from working altogether and 29 were in the labor force. The remaining 23 did not work, but were not entirely prevented from doing so. Table II-20 shows work disability information for Patterson, Stanislaus County, and California according to the 1980 Census.

TABLE II-20

WORK DISABILITY STATUS BY PERCENTAGE
Patterson, Stanislaus County, California
1980

	Patterson	Stanislaus County	California
With Work Disability			
In Labor Force	1.3	3.8	3.2
Not in Labor Force			
Prevented from Working	6.1	5.8	4.1
Not Prevented	1.0	0.9	0.9
Total with Work Disability	8.4	10.4	8.2
No Work Disability	91.6	89.6	91.8

Source: U.S. Bureau of the Census, 1980

The Census also identified those residents with public transportation disabilities. A public transportation disability is a health condition which makes it difficult or impossible to use buses, trains, subways, or other forms of public transportation. As Table II-21 indicates, in 1980, 3.6 percent of Patterson's residents aged 16 and over had transportation disabilities. 2.5 percent of those between 16 and 64 had such disabilities and 9.3 percent of the city's residents over 65 had public transportation disabilities. While Patterson's age group percentages differed slightly from the county's and the state's, the overall rate was about the same. The Housing Authority of the County of Stanislaus reported in December 1990 that of the 240 applicants on its waiting list for housing assistance, 1 person was disabled.

TABLE II-21

PUBLIC TRANSPORTATION DISABILITY BY AGE GROUP BY PERCENTAGE
Patterson, Stanislaus County, California
1980

	Patterson	Stanislaus County	California
16 to 64 with Disability	2.5	1.8	1.7
16 to 64 without Disability	97.5	98.2	98.3
65 and over with Disability	9.3	15.4	15.4
65 and over without Disability	90.7	84.6	84.6
16 and over with Disability	3.6	3.7	3.4
16 and over without Disability	96.4	96.3	96.6

Source: U.S. Bureau of the Census, 1980

Special needs of disabled persons vary depending upon the particular challenge with which one is afflicted. For example, the needs of a blind person differ greatly from those of persons confined to a wheelchair. Special facilities such as ramps, elevators or specially designed restrooms necessary for wheelchair access are architectural features needed to make dwellings suitable for persons confined to a wheelchair. Special features needed by ambulatory persons constrained by other disabilities may not be architectural. Instead, these might be simple alterations to conventional dwelling units for furnishing and appliances which make ordinary tasks of housekeeping and home life less trying and more enjoyable. In families, the needs of the disabled person, in terms of special features, would be fewer than those of a single person. Nevertheless, a disabled person in a family would have special needs. Special architectural features could be valuable in giving this person a greater independence, dignity, and quality of life.

Elderly

The 1990 Census indicated that 11.4 percent of the city's population was 60 years and older, and 8.6 percent was 65 years or older; approximately one-quarter of those over 65 were renters. These percentages are lower than those for Stanislaus County, where 14.4 percent of the population was over 60 and 10.8 percent was over 60. Similarly, though, 24 percent of persons over 65 countywide were renters. Statewide, 14.2 percent of the population was at least 60 and 10.8 percent was 65 or older. The Housing Authority of the County of Stanislaus reported in December 1990 that of the 240 applicants on its waiting list for housing assistance, 2 persons were elderly.

Housing costs since 1980 have escalated rapidly, making housing costs a very high proportion, and in some instances all, of an elderly person's Social Security Insurance payment. Many senior citizens live on fixed incomes and have limited resources for maintenance and rehabilitation. In addition, senior citizens who are long-term residents of rental units often experience substantial rent increases when their building is sold. Elderly residents in these circumstances often find themselves unable to locate comparable accommodations at an affordable price in the city and are forced to relocate to a new, unfamiliar community--an event which is frequently traumatic and debilitating.

For those retired and on fixed incomes, the costs of homeownership, particularly maintenance, generally constitute a much larger portion of monthly income than that of employed homeowners. Consequently, needed maintenance is often deferred, resulting in unpleasant, or sometimes unsafe living conditions. In some instances home maintenance costs can be overwhelming, necessitating sale and relocation after many years of attachment to friends and neighbors in the area.

There is a need not only to preserve for future generations the housing stock currently occupied by senior citizens but also to ensure that elderly residents are able to remain in safe and comfortable surroundings.

The increased longevity of elderly people and the increasing number of elderly in the population will result in an increasing need for affordable housing and specialized housing for older residents (especially low- and moderate-income elderly) such as congregate care, life care services and group care facilities.

<u>Large Families</u>

Family size is an important consideration when it comes to planning for housing. Areas which have large concentrations of large families need to assure that units large enough to accommodate such families are available. The 1990 Census indicated that 11.0 percent of Patterson's occupied housing units had six or more residents, significantly higher than Stanislaus County's 6.9 percent or the state's 7.0 percent. In Patterson, over half (56.0 percent) of the large families were renters. While this data is not correlated with information on the number of rooms in units where these large families reside, the trend toward large families does reinforce the proposition that Patterson is experiencing an overcrowding problem which is felt most acutely by large families in the area. The Housing Authority of the County of Stanislaus reported in December 1990 that of the 240 applicants on its waiting list for housing assistance, over half were large families requiring three-bedroom units or larger.

There is then, an unmet need on the part of large families in Patterson for increased housing opportunities that will alleviate problems of overcrowding in the community. Data compiled in the California Statewide Housing Plan, Phase I, indicate two-thirds of overcrowded households in the state were renters. Therefore, the most appropriate solution to the problems faced by large families is to develop programs that encourage the construction of large and affordable rental units.

<u>Farmworkers</u>

Because specific data on the number of farmworkers in a community is not systematically collected, it is difficult to assess the precise needs of this group. The Stanislaus Area Association of Governments as part of its *Housing Needs Report* estimated that farmworker housing needs would decline through the end of the decade. Recent developments, such as the increased state minimum wage and new federal immigration legislation, have led to increased numbers of migrant workers seeking housing in the area.

The California Statewide Housing Plan, Phase I, lists the following distinctive characteristics for farmworker households:

- They have low homeownership rates.
- The have large household sizes, and renter households are as large as those of owners.
- Married couples strongly predominate among both owners and renters, and most families include minor children.
- They live disproportionately in the housing which is in the poorest condition.
- They tend to have low incomes and high rates of poverty.
- They have very high rates of overcrowding.

Based on estimates provided by the Stanislaus County Housing Authority, it appears that Patterson is housing a disproportionately large number of farmworkers. Many of these farmworkers reside in group quarters. The Stanislaus County Housing Authority operates the Walnut Acres Migrant Center in Patterson. Walnut Acres has 30 barracks-like units capable of accommodating 30 families. The units, which suffer from structural problems and, until recent remedial measures were undertaken, posed health problems because of exposed lead-based paint, will be replaced by 44 new duplex units if the federal government provides funding for the $2.5 million project. In addition to the Housing Authority's units, the United States Farmers' Home Administration (FmHA) has 76 year-round farmworker units in Patterson and the California Department of Migrant Services has 45 seasonal housing units.

The Housing Authority reported in December 1990 that of the 240 applicants on its waiting list for housing assistance, 157 (65 percent) were farmworkers. Furthermore, an influx of migrants during the spring, summer, and fall generates additional housing needs. During each of the past two years (1989 and 1990), migrant or seasonal farmworker housing needs accounted for 100 additional Housing Authority applicants.. Ninety-two percent of all Housing Authority applicants in December 1990 were Hispanic.

The California Employment Development Department (EDD) estimates the total agricultural employment in the state's agricultural counties. EDD estimates that there were approximately 8,630 workers employed in agriculture in 1979 in Stanislaus County. According to EDD, the number of regular and seasonal hired workers countywide declined during the last decade. Because farmworkers are of very low income and their employment status is tenuous, they are often unable to compete for housing on the open market.

In its *Housing Needs Report*, the Stanislaus Area Association of Governments (SAAG) estimated the current farmworker housing need countywide to be 600 units. This need was projected through 1997 based on assumptions that the farmworker labor force has stabilized and is beginning to decline. The replacement need for 1990 to 1997 was assumed to be 88 units countywide. To estimate each jurisdiction's fair share, the existing farmworker housing need and replacement need was distributed among the county's jurisdictions at the same percentage share rate as the total 1990-1997 basic construction needs. All farmworker housing was included in the very-low-income category. Patterson was projected to have a housing need for 66 farmworker housing units during the 1990-1997 period.

Single Parent

In 1990, eight percent of Patterson's families were headed by single females. While 1990 Census data on income is not available, in 1980 only 24 percent of single female households were at a status above poverty. In 1990, the county had 8.1 percent of its households headed by single females. In 1980, only 42.0 percent of single female households maintained an above-poverty status.

Low and moderate income women in the housing market, especially single parents, face significant difficulties finding and maintaining housing. Housing affordability is a primary issue because frequently only one income is available to support the needs of the household--and only a limited amount of funds can be allocated to housing. While some of these households may find housing assistance through the Section 8 Rental Assistance Program, many others are victims of high rent and/or overcrowded conditions. Although there is a continuing need for affordable rental housing for small families, there is also a need for shared housing and group living alternatives where single-parent families can share not only space but child care and other resources as well.

Families and Persons in Need of Emergency Shelter or Transitional Housing

Throughout the country, homelessness has become a major concern. Factors contributing to the increase in homeless persons and families and those in need of transitional housing include:

- The lack of housing affordable to very low- and low-income persons
- Increases in unemployment or under-employment
- Reductions in government subsidies
- Deinstitutionalization of the mentally ill
- Domestic violence
- Drug addiction
- Dysfunctional families

Solutions to homelessness are as difficult and varied as the solutions to the problems listed above.

The housing needs of homeless persons are more difficult to measure and assess than those of any other population subgroup. Since these individuals have no permanent addresses, they are not likely to be counted in the Census, and since they are unlikely to have stable employment, the market provides few housing opportunities.

The City of Patterson has no reliable method of estimating the number of persons that may be classified as homeless. According to the Police Department, there is no permanent homeless population within the city.

The Police Department allocates funds through an association of churches in the city to assist indigent and homeless persons. Typically, these funds are used to pay for food or gas for persons who become stranded in the Patterson area. Local churches also provide clothing and assistance if needed. Motels in western Stanislaus County that offer weekly and monthly rates also serve as a source of transitional housing.

Summary of Special Needs

The following is a summary of findings concerning special need groups in Patterson from the 1980 Census and other sources:

- 8.4 percent of Patterson's population between the ages of 16 and 64 had a work disability in 1980;

- 11.4 percent of all persons residing in Patterson in 1990 were 60 years or older; 8.6 percent were 65 or older; approximately one-quarter of all senior citizen households in Patterson in 1990 were renter households;

- 11.0 percent of Patterson's occupied housing units had six or more residents, significantly higher than Stanislaus County or the state, at 6.9 and 7.0 percent, respectively. In Patterson, over half (56.0 percent) of those over 65 were renters; according to the Stanislaus County Housing Authority, a majority of applicants for year-round housing assistance in Patterson are large families;

- The Housing Authority reported in December 1990 that of the 240 applicants on its waiting list for housing assistance, 157 (65 percent) were farmworkers.

- In 1990, eight percent of all families in Patterson were headed by single mothers with children under the age of 18.

AVAILABILITY OF LAND AND SERVICES FOR RESIDENTIAL DEVELOPMENT

State law requires that housing elements contain an analysis of the availability of land for future residential growth and the adequacy of public facilities and services to accommodate this growth. Following are discussions of these issues as they pertain to Patterson.

City of Patterson Zoning Ordinance

The City of Patterson Zoning Ordinance provides for four districts which may be used for residential purposes. The zoning districts are as summarized follows:

- The **R-1, Single Family Residential Zone** is intended to provide for the development of single family homes to urban standards, together with schools, parks, open spaces, and other public services required for a satisfactory family environment. Only those accessory uses and accessory buildings customarily appurtenant to single family detached dwellings are permitted. The R-1 zone permits seven (7) dwellings units per net subdivision acre.

- The **R-2, Two Family Residential Zone** is intended to provide for the development of two family homes to urban standards, where a compatible mingling of single family and duplex dwellings is likely to occur, together with schools, parks, open spaces, and other public services required for a satisfactory family environment. Single family detached dwellings are permitted use in R-2 Zones. Only those accessory uses and accessory buildings customarily appurtenant to single family and duplex residential dwellings are permitted. The R-2 zone permits twelve (12) dwelling units per net subdivision acre.

- The **R-3, Medium Density Multiple Family Residential Zone** is intended to provide for the development of multiple family dwelling to urban standards together with schools, parks, open spaces, and other public services required for a satisfactory family environment. Duplex dwelling units are a permitted use in R-3 Zones. Only those accessory buildings customarily appurtenant to duplexes and multiple family residential dwellings are permitted. The R-3 zone permits twenty (20) dwelling units per net subdivision acre.

- The **Planned Development (P-D) Zone** is designed to accommodate various types of development, such as neighborhood and community shopping centers, professional and administrative areas, centers for senior citizens, multiple housing developments, commercial services centers, industrial parks, and any other combination of uses which can be made appropriately a part of a Planned Development. Any and all uses are shown on the specific development plan for the particular P-D Zone as approved by the City Council. A Planned Development Zone may be applied for to change any other existing zone upon approval of a specific development plan. All densities in P-D-zoned areas shall be established by the specific development plan as approved by the City Council.

Available Residential Sites

Patterson has experienced tremendous residential growth since 1986 which has used up most of the available residential land within the city limits.

Table II-22 lists the estimated vacant residential acreage and the number of housing units which could be developed within Patterson. The city limits were used for the survey due to the immediate availability of utility services to these sites. A range of estimates for the potential number of housing units is shown by applying both historical densities for past development and the maximum densities allowed under the Patterson Zoning Ordinance and State provisions.

TABLE II-22

UNCOMMITTED LAND AVAILABLE FOR RESIDENTIAL DEVELOPMENT
By Zoning Designation

Zones	Available Acreage	Average Development Factor	Estimated Units	Maximum Density	Estimated Units
R-1	35.8*	4.5	161	7	251
R-2	--	10.0	--	12	--
R-3	10.6	18.0	196	20	218
Total	**46.7**		**357**		**469**

*10.4 acres in approved subdivision

Source: City of Patterson Land Use Inventory, Fall 1990, and City of Patterson *Zoning Ordinance*

As Table II-22 shows, Patterson has roughly 47 acres of available land for residential purposes within the existing corporate limits. A range of from 357 to 469 housing units could be built in these areas. To continue residential growth, additional land will have to be annexed to the city.

The *1992 General Plan* includes substantial land for new residential development in various types of land use designations, as summarized in Table II-23.

TABLE II-23

LAND AVAILABLE FOR RESIDENTIAL DEVELOPMENT
1992 GENERAL PLAN

Land Use Designation	Maximum Density	Vacant Acreage	Dwelling Units*
Low Density	5 du/acre	1,819	6,403
Downtown Residential	8 du/acre	57	351
Medium Density	12 du/acre	68	598
High Density	20 du/acre	31	436
Total		**1,975**	**7,789**

* Assumed at 80 percent of maximum density

Source: City of Patterson General Plan *Draft Final EIR*, February 21, 1992.

Availability of Services

The City of Patterson can supply water and sewer services to all areas within the city limits. Expansion of the city will require additional sewage lines and water distribution mains. The sewer plant and water supply have the capacity to serve a population of approximately 10,000. Growth beyond this would require sewer plant expansion and additional wells. Chapter VI, "Public Facilities and Services," provides detailed discussions of Patterson's public services.

GOVERNMENTAL CONSTRAINTS ON THE PRODUCTION OF HOUSING

While local governments have little influence on such market factors as interest rates, their policies and regulations do constrain the free operation of the housing market. For the most part, local regulations play a legitimate role in protecting the public's health, safety, and welfare. In some cases, however, local regulations may restrict the operation of the housing market unnecessarily. Examination of the local regulatory structure can highlight those areas of "excessive" regulations where steps can be taken to remove or minimize obstacles to residential development.

A factor often cited by private developers for spiraling housing costs and the decrease in affordable housing for all sectors of the population is local governmental regulation. Governmental constraints imposed by the Federal, State, or local government can influence development. Such controls can be used to facilitate and encourage the development of housing or may have the opposite effect, posing barriers and frustration for the local developer. This section discusses efforts Patterson has made for the

development, maintenance and improvement for housing in five areas: land use controls, building codes and enforcement, on-and off-site improvements, fees, and processing and permit procedures.

Land Use Controls

Land use controls are generally minimum standards included in zoning and subdivision ordinances. The Patterson Zoning Ordinance controls such features as residential densities, lot sizes, and yard setbacks. Duplexes and apartments are alternatives to the single family home allowable in R-2 and R-3 zoned areas. Patterson has also accommodated low and moderate income needs by allowing for increased densities in planned development subdivisions. Table II-24 summarizes Patterson's existing property development regulations.

The Subdivision Ordinance governs the process of converting raw land into building sites. It allows the City to control the internal design of each new subdivision so that its pattern of streets, lots, and public utilities will be safe, pleasant, and economical to maintain. Again, overly restrictive standards will result in greater land development costs and/or lack of development interest. The City has worked very willingly with developers to cut costs. Planned developments that allow greater freedom for the contractor have been successful in cutting costs.

TABLE II-24

PROPERTY DEVELOPMENT REGULATIONS
City of Patterson
1990

Zoning District	Minimum Lot Area per Dwelling	Main Building Coverage	Maximum Height
R-A	6,000 s.f.	40%	35 ft.
R-1	6,000 s.f.	n/a	35 ft.
R-2	3,500 s.f.	n/a	35 ft.
R-3	2,178 s.f.	n/a	35 ft.

Source: City of Patterson *Zoning Ordinance*

Building Codes and Enforcement

While minimum building codes enforced by State law are essential to the physical construction of safe and lasting housing, additional standards controlling the design of housing may increase construction costs unnecessarily. Patterson has modified its building code to the requirements specified by State law. Because of the expansive soils in Patterson, soil reports are required for new subdivisions. Vapor barriers for concrete slab on grade floors is one of several possible methods for mitigating the effects of expansive soils. This is the only additional requirement adopted by Patterson other than the mandated State law provisions.

On- and Off-Site Improvements

Land improvements can be categorized as those designated to modify the existing parcel of land, an on-site improvement, or those to modify the exterior, or off-site areas. On-site improvements include such items as required off-street parking, fences and landscaping to control access and/or noise. Such public off-site improvements include curbs, gutters, sidewalks, pavement, adequate drainage, street lighting, and street trees. These have been deemed necessary to maintain the public health, safety, and welfare standards for a residential community.

Fees

While fees can contribute significantly to increased housing costs, Patterson has had very low planning fees. Patterson's planning fees are listed in Table II-25.

TABLE II-25

PLANNING FEES
City of Patterson
Fall 1990

Rezone	$545
Variance	365
Conditional Use Permit	230
General Plan Amendment	545
Lot Line Adjustment	365
Tentative Parcel Map	365
Tentative Subdivision Map	545
Time Extensions	130
Appeals	130
Home Relocation Permits	230

Source: City of Patterson, October 1990

Since the passage of Proposition 13 in 1978, local governments have come to rely increasingly on impact and connection fees to finance local infrastructure. The City of Patterson charges several fees on residential developments at the building permit stages, as shown in Table II-26.

TABLE II-26

DEVELOPMENT FEES
City of Patterson
Fall 1990

Sewer Connection	$1,400	per dwelling unit
Water Connection	$805	per dwelling unit
Water Meter (3/4")	$250	per dwelling unit
Drainage	$1,087 to $5,400	per acre (depending on drainage area)
Park Land Dedication	0.018	acres for single-family residential. In-lieu fees based on land value
Street Trees	1½ 3 $75	trees per lot trees per corner lot per tree
Municipal Facility Fee	$1.00	per square foot
School Impact Fee[1]	$1.58	per square foot

[1]Levied by Patterson Unified School District

Source: City of Patterson Planning Department, October 1990

In addition to City development fees, Stanislaus County levies development fees on residential and non-residential development on a countywide basis, including development that takes place in incorporated cities. Countywide fees fund roads, jails and courts, libraries, parks, public health, and other costs. Table II-27 lists the countywide development fees for residential uses.

TABLE II-27

COUNTYWIDE DEVELOPMENT FEES
City of Patterson
January 1990

	Inter-City Roads	City/County Roads	Jails	Justice	Library	Parks	Public Health	Out-Patient	Other Facility	Fee Admin.	Total Fee
Single Family	$1,457	$987	$1,066	$128	$314	$138	$93	$61	$90	$108	$4,442
Multi-Family	976	661	689	83	203	89	60	39	58	71	2,929
Senior Housing	583	395	689	83	203	89	60	39	58	55	2,254

Source: Stanislaus County, *Public Facilities Fees Administrative Guidelines*, March 1990

While the countywide impact fees alone do not add an unnecessary constraint to the development of affordable housing, they affect the cumulative impacts of countywide fees and city development fees do increase the costs of developing affordable housing in Patterson; particularly since the City exercises no control over these countywide fees.

Processing and Permit Procedures

An expeditious completion of processing and permit procedures can minimize development holding costs dramatically. Unfortunately delays often occur in the process which later translate into increased housing costs for the home buyer. Patterson follows differing processing procedures for various planning permits. Zoning modifications must be reviewed by both the Planning Commission and City Council, requiring an average of 60 days. Tentative maps for subdivision development must be reviewed by both the Planning Commission and City Council requiring an average of 60 days. All other use permits, environmental initial assessments and other project approvals of this type must be reviewed by the Planning Commission, requiring an average of less than 30 days. In cases where an Environmental Impact Report is required, several more months of time will be added to the processing time.

NONGOVERNMENTAL CONSTRAINTS ON THE PRODUCTION OF HOUSING

The availability of housing is strongly influenced by market factors over which local government has little or no control. State law requires that the housing element contain a general assessment of these constraints. This assessment can serve as the basis for actions which local governments might take to offset the effects of such constraints. The primary market constraints to the development of new housing are the costs of constructing and purchasing new housing. These costs can be broken down into four categories: materials, labor, land, and financing. Patterson can be considered as part of a very broad general housing market that includes the Central Valley area. For the most part, housing cost components

in Patterson are comparable to those in other parts of the general market area. The following paragraphs briefly summarize these components vis-à-vis the local market and the statewide market.

Material Costs

A major component of the cost of housing is the cost of building materials, such as wood and wood-based products, cement, asphalt, roofing materials, and plastic pipe. Prices for these goods are affected primarily by the availability and demand for such materials.

Because the Central Valley is served by such a well-developed regional transportation network and because many of the materials needed for construction are produced locally, availability of materials is excellent. The demand for building materials is also very high because there is so much housing development occurring in the area. The result of the combination of excellent supply and high demand is a very competitive market and, therefore, relatively low prices. In addition, the land in Patterson which is most likely to be developed in the future for housing is well-suited for the kind of large projects which allow developers to realize economy-of-scale savings on materials.

The costs of building materials in the Central Valley in general and in Patterson in particular are relatively low and, therefore, do not constitute a constraint to the development of affordable housing.

Cost of Labor

Another major cost component of new housing is labor. Inflated labor costs due to high wage rates significantly increase the overall cost of housing in some markets. The cost of labor in Patterson is, however, relatively low for a number of reasons. Overall, the Central Valley's cost of living is relatively low; wage scales in the area, therefore, tend to be somewhat lower than in markets with higher living costs, such as the San Francisco Bay Area. Also labor is generally less costly because the area is predominantly non-union. Labor in highly unionized markets is typically more expensive.

Land Costs

The effect of land costs on residential development can easily be identified. Costs associated with the acquisition of land include the market price of raw land and the cost of holding land throughout the development process. These costs can account for as much as half of the final sales price of new homes in very small developments or in areas where land is scarce. Among the variables affecting the cost of land are its location, its amenities, the availability of public services, and the financing arrangements made between the buyer and seller.

Because of the abundant availability of raw land in the area, land costs in the Central Valley housing market area are generally low. Developable land in Patterson is generally $40,000 to $60,000 per acre.

Cost and Availability of Financing

The cost and availability of capital financing affect the overall cost of housing in two ways. First, when the developer uses capital for initial site preparation and construction and, second, when the home buyer uses capital to purchase housing. The capital used by the developer is borrowed for the short-term at commercial rates, which are considerably higher than standard mortgage rates. Commercial rates nonetheless drop when the overall market rates decrease, so the currently low interest rates should have a positive effect on the housing construction market.

The home buyer uses capital financing in the form of long-term mortgage loans. When market rates for standard home loans drop below ten percent, financing costs favor the buyer. Table II-28 shows how the variation in interest rates affects the buyer's monthly mortgage payments on a range of loan amounts.

TABLE II-28

MONTHLY MORTGAGE PAYMENTS

Interest Rate (%)	Original Loan Amount $50,000	$60,000	$70,000	$80,000	$90,000	$100,000
9.0	402	483	563	644	724	805
9.5	420	505	589	673	757	841
10.0	439	527	614	702	790	878
10.5	457	549	640	732	823	915
11.0	476	571	667	762	857	952
11.5	495	594	693	792	891	990
12.0	514	617	720	823	926	1,029

Note: Based on a 30-year, fixed-rate mortgage, not including real estate taxes and home insurance. These costs add about 2 percent of the sales price annually.

Source: J. Laurence Mintier & Associates

Table II-29 relates loan interest rates to home loan affordability at various income levels. The figures in the table are based on principal and interest equaling 25 percent of the gross income and do not include taxes and insurance, which could add approximately 15 percent to the monthly payments. Most lenders, however, are qualifying buyers somewhere between 28 and 36 percent of total income. Table II-29, therefore, provides only a thumbnail estimate of loan affordability.

TABLE II-29

INCOME/LOAN AMOUNT AFFORDABILITY

Interest Rate	Annual Income $20,000	$25,000	$30,000	$35,000	$40,000	$45,000	$50,000
9%	1,560	63,550	77,500	89,600	103,200	116,000	128,000
10%	47,480	59,349	71,219	83,089	94,959	106,829	118,699
11%	43,753	54,691	65,629	76,567	87,505	98,443	109,382
12%	40,503	50,635	60,761	70,888	81,015	91,142	101,269
13%	37,667	47,083	56,500	65,916	75,333	84,750	94,166
14%	35,166	43,957	52,748	61,450	70,331	79,122	87,914

Source: National Association of Home Builders

The availability of financing is another important consideration, particularly for the builder. The cost of financing is irrelevant if lenders are unwilling to lend money to developers in a particular market. In Patterson, partly because of the abundance of locally-based financial institutions, financing is readily available.

Effects of Constraints On Total Development Costs

Given all of the above considerations, total development costs in Patterson will probably be very low. The overall effect of the various governmental and nongovernmental constraints is relatively insignificant in Patterson. Primarily because of low land costs, housing can still be produced more cheaply in the area than it can in other parts of the state.

PUBLICLY-OWNED SURPLUS LAND

According to state law, all public agencies intending to dispose of surplus land must first send a written offer to any local agencies within whose jurisdiction the land lies to sell or lease the land for the following purposes: recreation or open-space uses; enterprise zone uses; schools; or development of low- and moderate-income housing. In the event that the agency disposing the land receives more than one offer, it shall give first priority to the entity which agrees to use the site for housing for low- or moderate-income housing, unless the land is already being used for park or recreation uses, in which case the entity offering to continue these uses shall receive priority (*California Government Code* §54220 et seq.). There is no such land currently available in Patterson that would be suitable for residential development.

OPPORTUNITIES FOR ENERGY CONSERVATION

Residential energy conservation measures can take two forms: those applied to the construction of new housing and those added to existing housing to increase energy efficiency (retrofitting).

The State requires local governments to implement energy conservation standards for all new residential development. Under these requirements, every new residential building constructed must meet rigorous building standards for heat gain and heat loss. In mandating these requirements, the State has largely preempted the authority of local governments to regulate building construction with respect to energy conservation.

Patterson incurs mildly cold winters and very warm summers. Pacific Gas & Electric Company (PG&E) is the utility company serving the Patterson area with gas and electric service. PG&E promotes energy conservation and has implemented programs to inform customers of home energy saving techniques. To encourage the public to weatherproof their homes, thereby decreasing heating and cooling costs, PG&E offers a zero interest payment loan program for customers to make such improvements possible.

Modesto Junior College operates the "Sunrise Energy Center." The Center was started under a California Energy Commission grant for the development of an energy resource center. "Sunrise" offers conservation and solar energy classes, consumer product information and computer programs for conservation and solar energy. The center provides an informational resource clearinghouse for residents and businesses with a statewide computer link; experimentation in alternative fuels such as methane, solar and gasohol; outreach services to improve farming practices; and the building in which the center is housed serves as a demonstration/laboratory for solar projects and weatherization.

Self-Help Enterprises provides weatherization grants for the poor and elderly in the County.

New State energy conservation standards for residential buildings (Title 24, California Administrative Code) took effect July 13, 1982. However, legislation deferred the implementation of the new standards until June 15, 1983, for single family units and until December 31, 1983, for other residential uses.

The new standards recognize climatic differences within the state. They permit considerable flexibility to the builder, as long as a minimum "energy budget" is achieved. The California Energy Commission estimates new regulations will add about $2,000 to the cost of a home, and will cut energy consumption costs of the average of about 50 percent. The standards are State-mandated and do not require further local code changes.

CURRENT AND PAST HOUSING PROGRAMS IN PATTERSON

Seven-Year Action Program

The *1985 Housing Element* included a seven-year action program to achieve its quantified objectives. It is difficult to analyze the City's success at implementing its action program for several reasons. First, since adoption of the *1985 Housing Element*, City staff has undergone substantial turnover. Like many small cities, Patterson has limited City staff, often with one or two-person departments. As a result of department size and turnover, no staff in planning, city administration, or related departments involved in the preparation of the *1985 Housing Element* has worked for the City of Patterson for several years. It has therefore been difficult to evaluate the City's activities in response to the action program.

Since 1988, the City has been working on a comprehensive update of its General Plan, including the Housing Element. As a result, much of the attention has focused on the development of housing programs for the updated Housing Element.

The following lists the objectives and actions in the *1985 Housing Element's* Seven-Year Action Program and analyzes the City's success in implementing these actions to the extent possible.

Objective I: Provide for the expansion of 30 existing living units to alleviate overcrowded conditions.

Actions:
1. Publicize available home improvement loan programs
2. Publicize the availability of the accessory mobilehome use permit for the care of the elderly or infirm

Analysis: As a result of turnover in City staff, it is not clear whether these programs were publicized. While some home improvements and additions have taken place in Patterson over the last five years, the number of these which alleviated overcrowded conditions cannot be quantified.

Objective II: Provide opportunities for existing low-income households to convert from renter to owner status.

Actions:
1. Publicize available loan programs
2. Provide information on the local hot line regarding housing laws and discriminatory actions.

3. Evaluate the feasibility of a first-time homeowner mortgage insurance fund leveraged by grant and/or City funds.

Analysis: Again, for the same reasons as described under Objective I, it is not clear whether the programs under Action 1 were publicized. For Action 2, it is unknown what local hot line is referred to under this program. Under Action 3, the time frame for this program was 1987. As a result, no existing staff knows whether a feasibility study ever took place; however, no such program was instituted in Patterson.

Objective III: Provide for the retrofit of energy conservation improvements for 30 low-income occupied housing units.

Actions:
1. Publicize available loan and grant program.
2. Apply for a block grant to establish a rehabilitation program incorporating energy conservation features.

Analysis: The City posted all available weatherization/energy conservation programs. In July 1988, the City received a $600,000 California Community Development Block Grant (CDBG) to implement housing rehabilitation in targeted areas (see Figure II-2) to preserve and increase housing opportunities for low-income residents. In 1990, the program was expanded citywide.

The rehabilitation program provides financing based on Below-Market Interest Rate (BMIR) loans with an option for Deferred Payment Loans (DPL) for the elderly. The City's program also allows for participation of households whose housing costs exceed 25 percent of income, along with a limited option for grants under special circumstances. Straight BMIR loans with interest set at three percent are offered as financing mechanisms for owner-occupants whose housing costs are less than 25 percent of income and whose overall monthly indebtedness is less than 50 percent of monthly income.

Objective IV: Rehabilitate substandard units.

Actions:
1. Continue enforcement of nuisance ordinances.
2. Continue and publicize "Spring Cleanup Campaign"
3. Publicize the availability of existing grants and loans for rehabilitation.

Analysis: The City has enforced its nuisance ordinances on an ongoing basis. Spring Clean has continued annually and has been widely used. The City has publicized the availability of its rehabilitation grants and loans.

Objective V: Provide for new units on vacant land within existing neighborhoods.

Action:
1. Consider a program to waive a portion of development fees for infilling in specified areas.

Analysis: It is unknown whether the City formally considered such a program. However, during this time frame, the City's development fees have not been considered a deterrent to the development of affordable housing.

Objective VI: Provide a sufficient inventory of developable land.

Action:
1. Evaluate the need for developable land for housing within the City on an annual basis.

Analysis: The City's ongoing comprehensive General Plan update addressed this issue through detailed studies of remaining vacant land, constraints to development, and long-term housing and economic projections.

Generally, limited City staff and high staff turnover made it difficult to carry out and monitor the programs of the *1985 Housing Element*. The City was successful at maintaining its ongoing programs and pursuing and receiving rehabilitation funds.

Other Housing Programs

The Stanislaus County Housing Authority administers the Section 8 Rental Subsidy program in Stanislaus County. In 1990, there were approximately 3,000 certificates being used countywide, only 11 of which were being used in Patterson. The Stanislaus County Housing Authority also owns and operates 30 conventional low income housing units in Patterson, 66 year-round farm labor housing units, and 50 migrant worker housing units.

FINDINGS

- Patterson's housing stock has historically been composed primarily of single-family homes; this has become increasingly so throughout the 1980s, as single-family units have come to represent over three-quarters (80 percent) of the city's total units in 1990.

- Patterson has the lowest ratio of large multi-family dwellings (five units of more) to total multi-family dwellings of any city or county area in Stanislaus County.

- Since 1987, Patterson has experienced dramatic annual growth rates, ranging from a 13 to 17 percent increase in the number of housing units each year. These totals far surpassed the growth rates of the county for the same years. Patterson's dramatic housing stock growth is attributable almost exclusively to residential demand created by commuters from East Bay employment centers.

- Total growth in the number of housing units in Patterson has roughly paralleled population growth between 1980 and 1988, although housing has lagged slightly behind population growth.

- In 1990, Patterson's renter/owner mix was lower than Stanislaus County's and California's.

- Patterson's vacancy rate has fluctuated significantly since 1981. In 1990, it was 4.6 percent; this is the second highest vacancy rate in Stanislaus County.

- According to the 1990 Census, 18.6 percent of Patterson's occupied housing units were overcrowded. This was significantly higher than either the countywide rate of 7.6 percent and the statewide rate of 12.3 percent.

- Patterson has the highest person per household ratio of any city or county area in Stanislaus County at 3.36 persons per household.

- The City received a community development block grant to rehabilitate substandard housing. Despite the generally good visual appearance of Patterson's housing, it is likely that a significant number of units are in need of at least some minor rehabilitation, if only because of the age of the units.

- Patterson had a much lower incidence of low income overpayment in 1980 than either the county or the state.

- Based on estimates provided by the Stanislaus County Housing Authority, it appears that Patterson is housing a disproportionately large number of farmworkers.

- The Stanislaus County Housing Authority provides temporary shelter (overnight) for those individuals considered "homeless."

- The median sales price for a home in Patterson in 1990 was $125,000.

- Dramatic growth in the last few years has nearly exhausted Patterson's supply of residentially-zoned land. To continue residential growth, the City will have to annex additional land.

- The overall effect of the various governmental and nongovernmental constraints is relatively insignificant in Patterson. Primarily because of low land costs, housing can still be produced more cheaply in the area than it can in other parts of the state.

BIBLIOGRAPHY

California Department of Finance, Summary Report: Controlled County Population Estimates for Stanislaus County, 1981-1988

California Department of Housing and Community Development, *California Statewide Housing Plan, Phase I*, August 1987

____________________, *State Density Bonus Law*, 1990.

____________________, *New Income Limits*, 1990

____________________, *Status of Local Housing Elements*, 1989.

____________________, *Shelter for the Homeless: Housing Element Requirements*, 1989.

____________________, *Housing Element Questions and Answers*, 1988.

____________________, *Directory of Housing Programs*, 1987.

____________________, *Utilizing Public Surplus Lands*, 1983.

California Office of Planning and Research, *General Plan Guidelines*, 1987.

California Housing Partnership Corporation, *Inventory of Federally-Subsidized Low-Income Units at Risk of Conversion*, April 1990

Local Housing Element Assistance Project, *Blueprint For Bay Area Housing*, 1989.

City of Patterson, *Application for State Community Development Block Grant*, 1988.

City of Patterson, *1985 Housing Element*

Stanislaus Area Association of Governments, *Housing Needs Report*, February 13, 1991.

Stanislaus Area Association of Governments, *Stanislaus County Projections*, April 1985.

U.S. Bureau of the Census, *Summary Tape Files 1 and 3 (STF 1 & 3)*, 1980, California.

U.S. Bureau of the Census, *Summary Tape Files 1 and 3 (STF 1 & 3)*, 1980, Patterson.

U.S. Bureau of the Census, *Summary Tape Files 1 and 3 (STF 1 & 3)*, 1980, Stanislaus County.

U.S. Bureau of the Census, *Summary Tape File 1 (STF 1)*, 1990, California.

U.S. Bureau of the Census, *Summary Tape File 1 (STF 1)*, 1990, Patterson.

U.S. Bureau of the Census, *Summary Tape File 1 (STF 1)*, 1990, Stanislaus County.

GLOSSARY

Condominium - Ownership that enables a person to own an apartment or house in a development of similar units and hold a common or joint-ownership in common areas, hallways, entrances, elevators, etc. The owner has a deed to the individual unit, and, very likely, a mortgage on the unit, and also holds a common or joint ownership in all common areas, such as grounds, lobbies, and elevators. A condominium unit need not be occupied by the owner to be counted as such.

Contract Rent - The monthly rent agreed to, or contracted for, regardless of any furnishings, utilities, or services that may be included.

Dwelling Unit - One (1) or more habitable rooms which are designed to be occupied by one (1) family with facilities for living, sleeping, cooking, eating, and sanitation.

Family - Two or more persons, including the householder, who are related by birth, marriage, or adoption, and who live together as one household.

Gross Rent - Contract rent plus the estimated average monthly cost of utilities (water, electricity, gas) and fuels (oil, coal, kerosene, wood, etc.) to the extent that these are paid for by the renter (or paid for by a relative, welfare agency, or friend) in addition to the rent.

Household - The person or persons occupying a housing unit.

Housing Units - A house, apartment, mobilehome or trailer, group of rooms, or single room occupied as a separate living quarter or, if vacant, intended for occupancy as a separate living quarter. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from the outside of the building or through a common hall.

Income Levels - Income categories are defined with respect to the area or county median income and are adjusted for household size, as follows:

Very Low Income - Less than 50% of the area of county median income.

Low Income - Between 51% and 80% of the county median income.

Moderate Income - Between 81% and 120% of the county median income.

Above Moderate Income - Above 120% of the county median income.

Mean - The average of a range of numbers.

Median - The mid-point in a range of numbers.

Multi-family Dwelling Unit - A building or portion thereof designed for or occupied by two (2) or more families living independently of each other, including duplexes, triplexes, fourplexes, apartments, and condominiums.

Overcrowding - Households or occupied housing units with 1.01 or more persons per room.

Single Family Dwelling - A building or buildings designed for or occupied exclusively by one (1) family, excluding a mobilehome. Includes both detached and attached (townhouses) single family units.

Year-round Housing Units - All occupied units plus vacant units intended for year-round use, but excluding vacant units held for seasonal use or migratory labor.

CHAPTER III

POPULATION

CHAPTER III

POPULATION

INTRODUCTION

If a city is to effectively establish land use patterns and set policies regarding housing and public facilities and services, it must first have a clear understanding of who lives in the community and how the population has changed and is expected to change in the future. This chapter reviews historical population trends, current demographics, and population projections for the city of Patterson. Much of the information contained in this chapter is taken from the 1990 Census. Not all the 1990 Census data had been released by the publication of this document, therefore, in some cases, 1980 Census data is used where better information is not available. Recent studies performed by the Stanislaus County Economic Development Corporation, for Stanislaus County, and by the Stanislaus Area Association of Governments are also described and information is cited, but these studies do not provide citywide population information for detailed analysis.

HISTORICAL POPULATION GROWTH

Patterson's most dramatic historical population growth has occurred since 1986, with annual increases ranging from 11.5 percent to 17.7 percent from 1986 to 1990. As Table II-1 shows, these rates far exceeded countywide and statewide growth percentages for the same years. Prior to 1986, Patterson's population had grown steadily, yet modestly.

This dramatic increase in population can be attributed to persons employed in the Bay Area who moved to Patterson for its affordable housing and continue commute to work. A commuter survey performed by SCEDCO published in August 1988 estimates that approximately 14,000 commuters lived in Stanislaus County. No estimates for Patterson were made.

Table III-1 and Figure III-1 show how the populations of Patterson, Stanislaus County, and California have grown since 1970.

POPULATION CHARACTERISTICS

Age Distribution

Age structure is a particularly important planning consideration because different age segments of the population require different kinds of services. A younger population will likely demand more opportunities for active recreation, whereas an older population will likely call for more passive recreational facilities. Different age groups also require different consideration when it comes to housing. An older population will generally have less need for the type of large housing units that a population with a large number of residents of child-bearing age will need. Table III-2 shows the age distribution of Patterson's population in 1990.

TABLE III-1

POPULATION GROWTH RATES
Patterson, Stanislaus County, California
1970 to 1990

Year	Patterson Total	Patterson Annual Growth	Stanislaus County Total	Stanislaus County Annual Growth	California Total	California Annual Growth
1970	3,189		194,504		19,953,134	
1980	3,908	2.3	265,900	3.7	23,667,902	1.9
1981	4,145	6.1	271,916	2.3	24,212,000	2.3
1982	4,400	6.2	278,989	2.6	24,469,500	1.9
1983	4,411	0.3	286,111	2.6	24,944,700	1.9
1984	4,633	5.0	293.112	2.4	25,415,300	1.7
1985	4,783	3.2	299,996	2.3	25,857,500	1.7
1986	4,973	4.0	308,778	2.9	26,637,000	3.0
1987	5,695	14.5	320,645	3.8	27,292,349	2.5
1988	6,702	17.7	333,199	3.9	28,018,710	2.7
1989	7,574	11.5	347,506	4.3	28,662,249	2.3
1990	8,689	17.1	369,027	6.2	29,473,399	2.8
1991	8,982	3.2	383,322	3.7	30,351,029	2.9

Sources: U.S. Bureau of the Census, 1970, 1980, 1990; California Department of Finance, 1981, 1991. 1990 Census estimate for the population of California is 29,760,021 which differs from the above figure.

TABLE III-2

AGE DISTRIBUTION
Patterson, Stanislaus County, California
1990

Age Group	Patterson Total	Patterson % of Total	Stanislaus County Total	Stanislaus County % of Total	California Total	California % of Total
Under 18	3,113	36.0%	113,371	30.6%	7,750,725	26.0%
18 to 34	2,505	29.0%	101,467	27.4%	9,098,628	30.6%
35 to 59	2,020	23.4%	102,201	27.6%	8,675,797	29.2%
60 and Over	988	11.5%	53,483	14.4%	4,234,871	14.2%
Total	**8,626**		**370,522**		**29,760,021**	

Source: U.S. Bureau of the Census, 1990

FIGURE III-1

POPULATION GROWTH RATES
Patterson, Stanislaus County, California
1980 to 1990

Table III-2 shows that the age structure of Patterson differed slightly from those of the county and the state in 1990. The most notable distinction is the significantly higher percentage of residents under 18. Whereas 36.0 percent of Patterson's population was under 18, only 30.6 percent of the county's and 26.0 percent of the state's were.

According to the commuter survey by SCEDCO, 74 percent of the commuters surveyed were between the ages of 25 and 35. It should be noted that this does not accurately reflect the age breakdown of the commuter households surveyed because the survey did not provide information on the number of children per household. However, it does indicate that Patterson's population is moving toward a younger population.

Racial and Ethnic Composition

Table III-3 shows the breakdown of the ethnic subgroups of the population for Patterson, Stanislaus County, and California as of 1990.

TABLE III-3

ETHNIC COMPOSITION
Patterson
1990

	Patterson		Stanislaus County		California	
Ethnic Group	% of Total	Total	% of Total	Total	% of Total	Total
White	4,044	46.9	261,323	70.5	17,029,126	57.2
Black	132	1.5	6109	1.6	2,092,446	7.0
Asian[1]	283	3.3	21,620	5.8	2,894,418	9.7
Spanish[2]	4,156	48.2	80,897	21.8	7,687,938	25.8
Other	11	0.1	573	0.2	56,093	0.2
Total	**8,626**	**100.0**	**370,522**	**100.0**	**29,760,021**	**100.0**

[1]Includes Asian and Pacific Islander, American Indian, Eskimo, and Aleut.

[2]Persons of Spanish origin are deducted from each race category and shown separately as Spanish.

Source: U.S. Bureau of the Census, 1990

As Table III-3 shows, Patterson differed significantly from both the county and the state in 1990. The overwhelming distinction was Patterson's percentage of residents identifying themselves as Spanish, with almost half (48.2 percent) of Patterson identified as of Spanish origin, compared with Stanislaus County's 21.8 percent and California's 25.8 percent.

According to the SCEDCO commuter survey, recent population growth from commuters is predominantly white (80 percent).

Household and Family Composition

Table III-4 shows a breakdown of family composition according to the 1990 Census for Patterson. As the table indicates, Patterson had a higher percentage (43.2 percent) of married couple families with children than either the county (32.3 percent) or the state (26.9 percent). The city also had a low percentage of single female households without children (2.5 percent) compared with the county (3.4 percent) and the state (3.9 percent). Single-person households totaled 363, 130 male households and 233 female households.

TABLE III-4

FAMILY COMPOSITION
Patterson
1990

Family Type	Patterson Total	Patterson % of Total	Stanislaus County Total	Stanislaus County % of Total	California Total	California % of Total
Married Couple w/Children	1,109	43.2	40,504	32.3	2,791,452	26.9
Married Couple w/o Children	625	24.4	33,974	27.0	2,678,070	25.8
Single Male w/Children	87	3.4	3,271	2.6	252,314	2.4
Single Male w/o Children	31	1.2	2,088	1.7	225,378	2.2
Single Female w/Children	206	8.0	10,209	8.1	784,315	7.6
Single Female w/o Children	64	2.5	4,260	3.4	407,865	3.9
Non-Family Households	81	3.2	6,175	4.9	811,945	7.8
Single Person Household						
Male	130	5.1	9,852	7.9	1,070,030	10.3
Female	233	9.1	15,042	12.0	1,359,837	13.1
Total	2,566		125,375		10,381,206	

Source: U.S. Bureau of the Census, 1990

Place of Residence

The 1980 Census indicated that the population of the Patterson area was very stable, with a high proportion of long-time residents. In 1980, 69.3 percent of Patterson's residents had lived in the same house for at least five years. In contrast, only 43.2 percent countywide and 44.6 percent statewide lived in the same house that they had lived in five years earlier. Table III-5 shows the residential movement patterns of the local population between 1975 and 1980.

TABLE III-5

RESIDENTIAL PATTERNS
Patterson, Stanislaus County, California
1975 to 1980

Place of Residence	Patterson Total	Patterson % of Total	Stanislaus County Total	Stanislaus County % of Total	California Total	California % of Total
Same House	2,508	69.3	105,695	43.2	9,797,761	44.6
Different House in Same County	745	20.6	80,756	33.0	6,631,480	30.2
Different County in California	230	6.4	8,6432	15.8	2,651,628	12.1
Different State	51	1.4	12,962	5.3	1,877,289	8.5
Different Country	87	2.4	6,662	2.7	1,021,703	4.6
Total	3,621	100.0	244,718	100.0	21,979,861	100.0

Source: U.S. Bureau of the Census, 1980

The SCEDCO commuter survey respondents indicated that 90 percent had lived in Stanislaus County less than two years. This is directly attributable to the dramatic population growth in Patterson since 1986. The survey focused on newly developed subdivisions, so the conclusion was to be expected.

POPULATION PROJECTIONS

Population projections form the basis for almost all planning activities. Community planning can, therefore, only be as effective as the ability of local officials to anticipate population growth. In the case of Patterson and Stanislaus County, population growth has historically been relatively moderate and predictable until recently.

Since 1986, there has been tremendous demand for residential development in Patterson and throughout western Stanislaus County, as indicated by the growth pressures felt by Patterson and other West Side communities and the number of major development proposals in the area (see Chapter I, Land Use, for a discussion of these proposals). The demand for growth is driven largely by commuters to Bay Area employment centers, who move to the West Side because of its affordable housing and quality of life. Since 1990, the recession has resulted in a decline in demand for new housing throughout California. The real estate market is cyclical by nature, and declines and upturns are to be expected.

The growth trend was largely unanticipated by forecasting entities, and only recently have population projections been adjusted to reflect this trend. Recent forecasts project a high rate of population growth to continue through 2010.

In 1988, Stanislaus County contracted with Kreines & Kreines and QED Associates to evaluate potential countywide population and employment growth and its impacts. QED analyzed two growth scenarios to

reflect the uncertainties of economic cycles, public policies, and commuting patterns. The two growth scenarios differ primarily in their assumptions about future increases in the number of Bay Area commuters versus the number of county-employed residents.

The lower growth scenario assumes that the number of commuters countywide will peak at 20,000 in the year 2000 and then remain constant. This scenario projects that 80,000 new residents moving into Stanislaus County between 2000 and 2010 will find local employment.

The higher growth scenario forecasts that the number of Bay Area commuters will peak at 30,000 in the year 2000 and will then decline to 27,000 as some residents switch to jobs in the local economy. This scenario also forecasts that an additional 108,000 new residents will move into the county between 2000 and 2010 and find employment in the county's expanding economy. The higher growth scenario (Scenario B) was revised into an *Economic Strategic Plan.* The *Economic Strategic Plan* assumed that much of the growth would take place (under a revised County land use policy) in "remote developments" away from prime farmlands, with access to state and federal interstate highways, and with more balanced housing and job development.

Table III-6 shows the *Economic Strategic Plan*'s forecasts of countywide population and employment.

TABLE III-6

PROJECTED POPULATION, EMPLOYMENT, AND COMMUTER GROWTH
Stanislaus County
1990-2010

	1990	2000	2010	Compound Annual Growth
Population	354,000	502,000	610,000	2.53%
Employment	154,000	221,000	282,000	3.07%
Resident Commuters	16,000	30,000	27,000	2.65%

Source: *A Strategic Planning Approach for Change: Population and Economic Forecasts 1988-2010*, Kreines & Kreines and QED Research Inc., June 1988

The *Economic Strategic Plan* further projected that the highest relative growth would occur in western Stanislaus County. With an estimated 1988 population of 12,239, the *Economic Strategic Plan* projected that the western Stanislaus County's population would grow to 114,957 in 2010. As described above, much of this population growth was assumed to take place in "new towns," rather than in existing communities. The QED forecast did not estimate Patterson's share of countywide population or employment growth.

The Stanislaus Area Association of Governments (SAAG) revised its population projections for Stanislaus County and its cities in November 1989. SAAG projects significant growth in Patterson and countywide

from 1990 to 2010, as shown in Table III-7. SAAG's projections assume Stanislaus County will continue to attract over 17 percent of the 1.8 million new people moving into the "outer Bay Area" counties by 2010. This assumption produces a projected county population exceeding 700,000 by 2010, almost double its 1990 population. SAAG's projections exceed those made in the *Economic Strategic Plan*. Table III-7 summarizes SAAG's forecast.

TABLE III-7

POPULATION PROJECTIONS
Patterson and Stanislaus County
1990, 2000, 2010

	Patterson				Stanislaus County	
	Incorporated		Gen. Plan Area[1]			
Year	Pop	% Change	Pop.	% Change	Pop.	% Change
1990	8,300	--	8,809	--	363,384	--
2000	12,300	48.2%	12,809	45.4%	512,637	41.1%
2010	18,600	51.2%	19,109	49.2%	700,770	36.7%
1990-2010		124.1%		116.9%		92.8%

[1]Existing (1978) General Plan Area

Source: *Stanislaus County Projections*, Stanislaus Area Association of Governments, November 1989.

As Table III-7 indicates, SAAG projects that Patterson will grow from a population of 8,300 in 1990 to 12,300 in 2000, and to 18,600 in 2010. SAAG's projections allocate new development to each city in the county based on historic distributions from 1970 to 1989. Thus, SAAG's forecasts of Patterson's growth do not incorporate some of the critical market forces facing Patterson, discussed in Chapter IV, Economic Conditions and Fiscal Considerations.

The SAAG forecast of residential growth also made no specific assumptions of the possibility of development of one or more major new developments proposed on the West Side. Five of these proposed developments lie within a 20-mile radius of Patterson, including Lakeborough, Diablo Grande, Mapes Ranch, and Grayson. A summary of the major proposed developments in the region is provided in Table I-5 in Chapter I, "Land Use."

FINDINGS

- Patterson experienced its most dramatic growth in 1986 and 1987, with its population increasing by 14.5 percent during 1986 and by 17.7 percent during 1987. The most notable distinction is the significantly higher percentage of residents under 18.

- Whereas 36.0 percent of Patterson's population was under 18, only 30.6 percent of the County's and 26.0 percent of the state's were.

- Patterson differed significantly from both the county and the state in 1990 with respect to ethnic populations. The overwhelming distinction was Patterson's percentage of residents identifying themselves as Spanish, with almost half (48.2 percent) of Patterson identified as of Spanish origin, compared with Stanislaus County's 21.8 percent and California's 25.8 percent.

- Patterson had a higher percentage (43.2 percent) of married couple families with children in 1990 than either the county (32.3 percent) or the state (26.9 percent).

- In 1990, Patterson had a low percentage of single female householders without children (2.5 percent) compared with the county (3.4 percent) and the state (3.9 percent).

- The 1980 Census indicated that the population of the Patterson area was very stable, with a high proportion of long-time residents.

- According to population projections for Stanislaus County, western Stanislaus County will grow from 12,239 in 1988 to 114,957 in 2010, more than a ten-fold increase.

- The Stanislaus Area Association of Governments projects that Patterson's population will grow from 8,300 in 1990 to 12,300 in 2000 to 18,600 in 2010.

BIBLIOGRAPHY

A Strategic Planning Approach for a County in Change: Population and Economic Forecasts, 1988-2010, Prepared for the County of Stanislaus by Kreines & Kreines, June 1988.

California Department of Finance, *Summary Report: Controlled County Population Estimates for Stanislaus County*, 1981-1988

Cattaneo & Stroud, Inc., *20-Year Development Plan for Del Puerto Hospital, 1985-2005*, November 1986.

City of Patterson, *1985 Housing Element*

Stanislaus County County Economic Development Corporation, *Commuter Survey*, August 1988.

Stanislaus Area Association of Governments, *Stanislaus County Projections*, November 1989.

U.S. Bureau of the Census, *Summary Tape Files 1 and 3 (STF 1 & 3)*, 1980, California.

U.S. Bureau of the Census, *Summary Tape Files 1 and 3 (STF 1 & 3)*, 1980, Patterson.

U.S. Bureau of the Census, *Summary Tape Files 1 and 3 (STF 1 & 3)*, 1980, Stanislaus County.

U.S. Bureau of the Census, *Summary Tape File 1 (STF 1)*, 1990, California.

U.S. Bureau of the Census, *Summary Tape File 1 (STF 1)*, 1990, Patterson.

U.S. Bureau of the Census, *Summary Tape File 1 (STF 1)*, 1990, Stanislaus County.

CHAPTER IV

ECONOMIC CONDITIONS AND FISCAL CONSIDERATIONS

CHAPTER IV

ECONOMIC CONDITIONS AND FISCAL CONSIDERATIONS

INTRODUCTION

Long-range city development plans must consider market factors and trends as well as fiscal capabilities of the city. This chapter reviews the general economic and employment characteristics of Patterson, discusses market factors and trends in Patterson, and assesses the City's fiscal capacity to accommodate further development.

ECONOMIC CONDITIONS

The current and future health of a community is dependent on the amount, timing, and location of future development. Local, regional, and national economic and market conditions play an important role in determining the direction of local development.

Economic and Employment Characteristics

According to the 1980 Census, the most recent demographic data on economic and employment characteristics available, Patterson's economy is based primarily on four industrial groups. Employment trends in Patterson are presented in Table IV-1. The principal industries are: agriculture and related services, educational services, retail trade, and nondurable goods manufacturing. The most important of this group is agriculture and related services. Primary commodities produced are dry beans, green beans, apricots, tomatoes, mixed melons, spinach, and peas.

Since 1980, the City's population has increased significantly. This growth is attributed to an increased demand for housing by people who are employed in the San Francisco Bay Area and are willing to commute from Patterson because of the city's lower housing costs. The changing demographic structure of the city's population indicates that the composition of major employers has also changed. According to a commuter survey performed by the Stanislaus County Economic Development Corporation (SCEDCO) in 1988, manufacturing (15 percent), government (14 percent), construction (14 percent), and services (13 percent) were the primary employers of Patterson commuters. The employers named most frequently by the survey respondents were AT&T (5 percent), Lawrence Livermore Laboratory (4 percent), and Sandia Labs (2.5 percent).

Residential Development

Patterson maintained a steady residential growth rate until 1986, when the city experienced an explosive upswing. Between 1986 and 1990, Patterson's housing stock increased by 1,157 units, an increase of 73 percent.

TABLE IV-1

EMPLOYMENT TRENDS IN PATTERSON

Industry	Number of Employees	Percent
Agricultural	229	16.46
Construction	42	3.02
Nondurable goods manufacturing	186	13.37
Durable goods manufacturing	30	2.16
Transportation	77	5.54
Communications and public utilities	47	3.38
Wholesale trade	50	3.59
Retail trade	194	13.95
Finance, insurance, real estate	90	6.47
Business and repair services	45	3.24
Personal, recreation services	68	4.89
Health services	61	4.39
Educational services	208	14.95
Other professional services	38	2.73
Public administration	26	1.86
Total	**1,391**	**100.00**
Occupation		
Executive, administrative, managerial	138	9.92
Professional specialty	118	8.48
Technicians and related support	11	.79
Sales	118	8.48
Administrative support, clerical	181	13.01
Private household		
Protective service		
Service	188	13.52
Farming, forestry, and fishing	222	15.96
Precision production, craft	165	11.86
Machine operators, assemblers, and inspectors	85	6.11
Transportation and material moving	74	5.32
Handlers, equipment cleaners	91	6.55
Total	**1,391**	**100.00**

Source: U.S. Bureau of the Census, 1980

Patterson is located 80 miles from San Francisco via Interstates 5 and 580, and 55 miles southeast of Livermore. A large number of jobs are being created in these areas. Much of Patterson's recent residential growth can be attributed to its ability to attract Bay Area commuters who cannot afford similar but higher priced housing close to their places of employment.

Currently, there are approximately 47 acres available for residential development within the city. If the city is going to continue its residential growth, additional land will need to be annexed.

Commercial Development

Commercial development in Patterson has focused on fulfilling the needs of local residents. Historically, Patterson has not been a commercial center. Traditionally, the population in Patterson has not been large enough to support specialty stores in town. Patterson experiences substantial commercial sales "leakage" to Modesto and other larger towns where selection is better and where prices are more competitive. Purchases of convenience store items occur primarily in town because it saves shopping time. Similarly, many services are purchased locally.

An analysis of employment trends in Patterson shows that the local business and job market has been moving from a retail to a service orientation. The only businesses to close in Patterson recently are a shoe store and a department store; these kinds of establishments typically must rely on a market of a critical size to remain solvent.

Taxable retail sales for Patterson from 1983 to 1989 are presented in Table IV-2. Retail stores include businesses and personal service shops; most grocery store food sales are not included because their sales are generally not taxable. "Other outlets" are defined as manufacturers and wholesalers, construction contractors, and part-time operators.

Taxable sales by Patterson's businesses increased from approximately $22.1 million in 1983 to approximately $39.3 million in 1989. Much of the increase in retail sales can be attributed to the rising population.

Within the Patterson city limits there is limited space available downtown zoned for commercial uses. Without annexing additional commercial land or redesignated some of the land uses within the city, however, commercial expansion is very limited.

TABLE IV-2

GROSS TAXABLE SALES IN PATTERSON
1983 to 1989
(in thousands)

	1983[1]	1984[1]	1985[1]	1986[1]	1987[2]	1988[2]	1989[2]
Sales	$22,113	$25,966	$29,388	$26,854	$29,896	$35,086	$39,294
Percent Change		17.4%	13.2%	-8.6%	11.3%	17.3%	12.0%

[1] State Board of Equalization
[2] Stanislaus County Economic Development Corporation, 1990

Industrial Development

As shown in Table IV-3, Patterson Frozen Foods, with 750 employees, is Patterson's major employer. Other large employers include Design Mobile Systems, which employs 75 people, and Office Space Incorporated, which employs 41 people.

TABLE IV-3

MAJOR EMPLOYERS IN PATTERSON

Manufacturing Employers	Employment	Product
Patterson Frozen Foods	750	Frozen Vegetables (+150 During Season)
Design Mobile Systems	75	Modular Buildings
Office Space Incorporated	41	Commercial Mobile Offices
Composite Products, Inc.	25	Agriculture Implements
Hancor, Inc.	20	Plastic Pipe
McCormick Spice Farms	10	Spices (+15 During Season)
Non-Manufacturing Employers	**Employment**	**Type of Business**
Patterson Unified School District	214	Education
Del Puerto Hospital	94	Hospital
City of Patterson	48	Government

Source: Stanislaus County Economic Development Corporation, 1987

Patterson's industrial area currently comprises approximately 121 acres. Within the city limits, 37 acres are vacant and zoned for industrial development. These parcels range from 1 to 11.6 acres. An 11.6-acre site is within a flood plain and thus could face additional development costs.

In 1988, the City commissioned a Target Industry Identification Report by Economic Development Services (EDS), using funds from a State Rural Renaissance Grant. EDS analyzed over 550 industries to determine their potential as marketing targets for Patterson. The report identified the following manufacturing, office/clerical, and distribution industries as the most promising targets for the city.

Manufacturing

- Electronic Computing Equipment
- Biological Products
- Fabricated Metal Products
- Electronic Components

Office/Clerical

- Data Processing Services
- Fire, Marine and Casualty Insurance
- Life Insurance
- Accident and Health Insurance
- Miscellaneous Business Credit Institutions
- Research and Development Laboratories

Distribution

- Industrial Machinery and Equipment
- Groceries and Related Products
- Chemicals and Allied Products
- Industrial Supplies
- Construction Materials
- Drugs, Proprietaries, and Sundries

Prior to initiating the targeted industry screening process, EDS prepared a comparative rating of Patterson's locational strengths and weaknesses relative to competing communities. Communities chosen as a representative cross-section of alternative locations for industry included Fairfield, Fresno, Hollister, Madera, Merced, Modesto, Napa, San Jose, Stockton, and Visalia.

Patterson's primary advantages compared to these communities were: entry-level and semi-skilled wage rates and labor availability, industrial land prices, distribution and transportation services, proximity to markets and suppliers, cost of housing, and community environment. Relative disadvantages were land/site available and lack of incentives.

FISCAL SETTING

The City of Patterson provides a variety of services to local residents and businesses, including legislative and administrative services, police and fire protection, water and sewer services, refuse collection, street maintenance, and parks and recreational services.

The City finances these services through the operating budget's four separate funds, as shown Table IV-4 and discussed in greater detail in the following sections. Budget allocation by fund is illustrated in Figure IV-1. In addition to the operating budget, the City has two additional funds called the Park Land Sales & Purchase Interest and the Water Deposit Trust Fund. In Table IV-4, these funds are combined into a category called Other. These budgets are funded through specially dedicated funds which would only be affected indirectly by the general plan update and thus are not discussed further in this chapter.

This report focuses on the City's budgets for fiscal years (FY) 1988-89, 1989-90, and 1990-91.

FIGURE IV-1

BUDGET ALLOCATION BY FUND
City of Patterson
Fiscal Year 1990-91

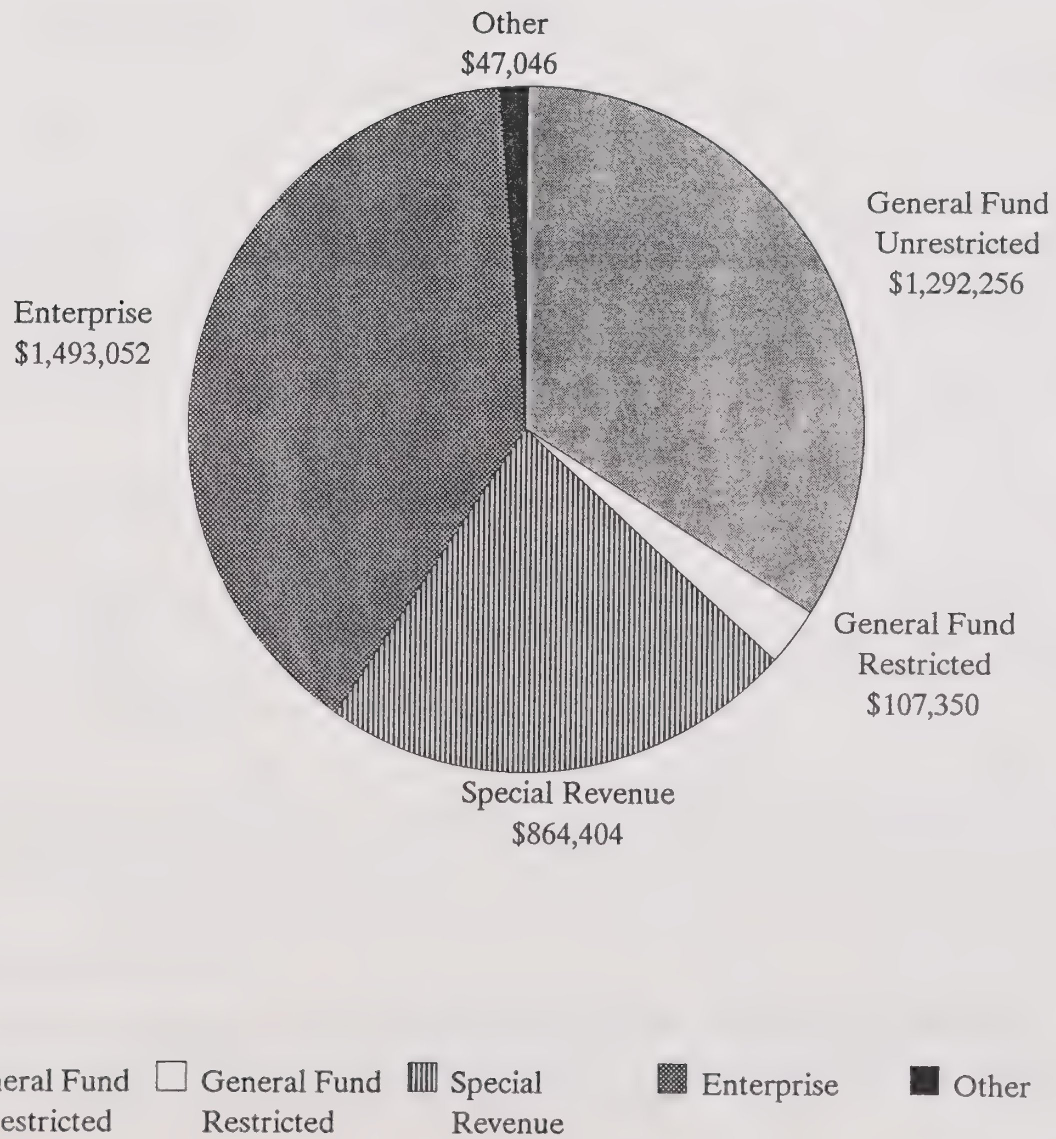


TABLE IV-4

PATTERSON OPERATING BUDGETS BY FUND

Fund	Actual 1988-89	Actual 1989-90	Projected 1990-91 Expenditures
General (Unrestricted)	$1,171,716	$1,438,761	$1,846,650
General (Restricted)	140,041	207,999	107,350
Special Revenue	304,742	374,172	864,404
Enterprise	698,895	863,717	1,493,052
Other	97,418	167,408	47,046
Total	**$2,412,812**	**$3,052,057**	**$4,358,502**

Source: City of Patterson Financial Statement

Operating Budget

The City finances its ongoing operations and services through the operating budget. The operating budget is divided into four categories: the Unrestricted General Fund, the Restricted General Fund, the Special Revenue Fund, and the Enterprise Fund. The fiscal year budgets for 1986-87; 1987-88, and 1988-89 are shown in Table IV-4. With the exception of the Unrestricted General Fund, the funds are discussed in the following paragraphs. The Unrestricted General fund finances the City's ongoing operations and would be most affected most by the general plan update; consequently, it is discussed in greater detail later in this chapter.

- General Fund (Restricted)

  This fund is used for acquisition and development of parks and for operation of recreation activities. Monies for recreation are generated primarily through fundraisers and by user fees and charges. Acquisition money comes primarily from developers who, under the Quimby Act, donate money for the City to acquire parklands. Funds are transferred from the Unrestricted General Fund to pay for one-half of the salary of the Recreation Director.

  The budget was reduced from FY 1989-90 to FY 1990-91, primarily because of a decrease in revenue from developer contributions to park acquisition. The operations side of the Restricted General Fund can be expected to undergo additional pressure as residential development occurs and as the demand for park and recreation services increases.

- Special Revenue Funds

  This fund is used for capital improvement projects or for expenditures on streets and highways. The revenues come primarily from developers as facilities fees, or the storm drain fund, and from the state as gas tax or other revenues dedicated to streets and highways.

The budget grew from FY 1989-90 to FY 1990-91. The rising revenues can be attributed to larger Community Development Housing Rehabilitation Grants and to a growth in the city's population, which increased the city's share of revenues from the state.

- Enterprise Funds

  These funds are self-supporting and finance water, sewer, and refuse collection projects. The revenues are generated by user charges and connection fees. Increases in capital costs or operational costs are usually offset through consumer adjustment charges or by increasing the connection fees.

General Fund

The General Fund finances a variety of departments and services, including legislative and administrative functions, police and fire protection, public works, and parks and recreation. The General Fund finances park and recreational needs by transferring funds to the Restricted General Fund.

General Fund revenue are derived from several sources, including state tax revenue allocations, local taxes, and service fees. Patterson's General Fund budget was approximately $1.45 million in FY 1989-90, and is anticipated to approach $1.85 million in FY 1990-91.

General Fund Expenditures

General Government

Departments funded through general government revenues include the City Council, City administration, City treasurer, City attorney, building maintenance, planning and building inspection, and City clerk. As shown in Table IV-5, the general government allocations for FY 1990-91 total $349,210, or 16.6 percent of the total General Fund budget. This is a 7.5 percent increase over the previous fiscal year. Most of this increase can be attributed to increases in the budget of the city attorney's office and the building maintenance department.

Nondepartmental

These revenues fund expenditures needed for city growth and maintenance that do not fall into other categories. These expenditures include City membership dues for various organizations, miscellaneous equipment, utilities payments and expenses in general. The FY 1990-91 budget projects allocations for this category totaling $143,660, or 6.83 percent of the total budget. This represents a 8.08 percent decline from the previous fiscal year.

Police Protection Services

Patterson's FY 1990-91 police protection services allocations totaled $891,720 or 42.39 percent of the General Fund. Allocations for the police department increased 7.97 percent from the previous year.

Fire

FY 1990-91 allocations for the fire department total $188,960. This is 8.98 percent of the budget, and represents a 7.86 percent increase from the previous fiscal year.

Engineering

Engineering services funded by the General Fund include various professional and technical engineering services. This account also receives funds from sources other than the General Fund. The total allocation for this department during FY 1990-91 is projected to be $66,130, which is 3.14 percent of the total General Fund expenditures, and represents a 4.2 percent increase from the previous fiscal year.

Streets

Services funded through the streets account include street maintenance and repairs, tree replacements and care, and street lights. While not funded completely with the General Fund, FY 1990-91 appropriations are proposed to be $330,640. At 15.72 percent, the streets account represents the second highest expenditure category in the General Fund. The allocation declined by 7.2 percent from the previous fiscal year.

Recreation

The General Fund transfers money to recreation accounts to help finance park and recreational activities. The total proposed 1990-91 allocations to parks and recreation from the General Fund are $133,220. This represents 6.33 percent of the total allocations, and is a 16.99 percent decline from the previous fiscal year.

TABLE IV-5

SUMMARY OF APPROPRIATIONS
Fiscal Years 1988-89, 89-90, and 90-91

	Actual 1988-89	Actual 1989-90	Percent Change	Percent of Total Alloca-tion	Adopted 1990-91	Percent Change	Percent of Total Alloca-tion
City Council	$ 2,750	$ 2,781	1.12	0.13	$ 2,865	3.02	0.14
Administration	69,130	70,624	2.16	3.42	76,200	7.90	3.62
City Treasurer	124	124	0.00	0.01	130	4.84	0.01
City Attorney	29,838	29,620	-0.99	1.44	40,230	35.82	1.91
Building Maintenance	36,742	40,259	9.57	1.95	58,775	45.94	2.79
Planning/Building Inspection	160,689	141,734	-11.79	6.87	134,225	-3.11	6.38
City Clerk	42,681	39,592	-7.23	1.92	36,785	-7.09	1.75
Nondepartmental	156,658	156,290	-0.23	7.58	143,660	-8.08	6.83
Police	675,172	825,881	22.32	40.05	891,720	7.97	42.39
Fire	107,446	175,193	63.05	8.49	188,960	7.86	8.98
Engineering*	115,056	63,463	-44.84	3.08	66,130	4.20	3.14
Streets*	288,380	356,277	23.54	17.28	330,640	-7.20	15.72
Recreation Commission	74,330	81,404	9.51	3.95	89,865	10.39	4.27
Parks and Recreation	59,702	70,090	32.47	3.83	43,355	-45.18	2.06
Total	**$1,818,698**	**$2,062,332**	**13.39**	**100.0**	**$2,103,540**	**1.99**	**100.0**

*Some revenue for these operations is generated from other funds

Source: City of Patterson Finance Department

General Fund Revenues

Sources of general fund revenues are presented in Table IV-6 and illustrated in Figure IV-2.

Property Taxes

As shown Table IV-6, revenues from property taxes were estimated to total $345,500 during FY 1990-91. This represents 21.0 percent of the City's total revenues, and is an increase of 7.8 percent from the previous fiscal year.

Property taxes are levied on the basis of 1 percent of property assessment values. The City of Patterson receives approximately 7.5 percent of this assessed value. The growth of property tax revenues is largely dependent on new development and how extensively existing property is resold. Proposition 13 limited increases in the assessed valuations of property to 2 percent per annum for property that does not change ownership. Historically, the housing turnover rate in Patterson has been relatively low, so that the increase in property tax revenue is due primarily to new development.

FIGURE IV-2

GENERAL FUND REVENUE SOURCES
City of Patterson
Fiscal Year 1990-91

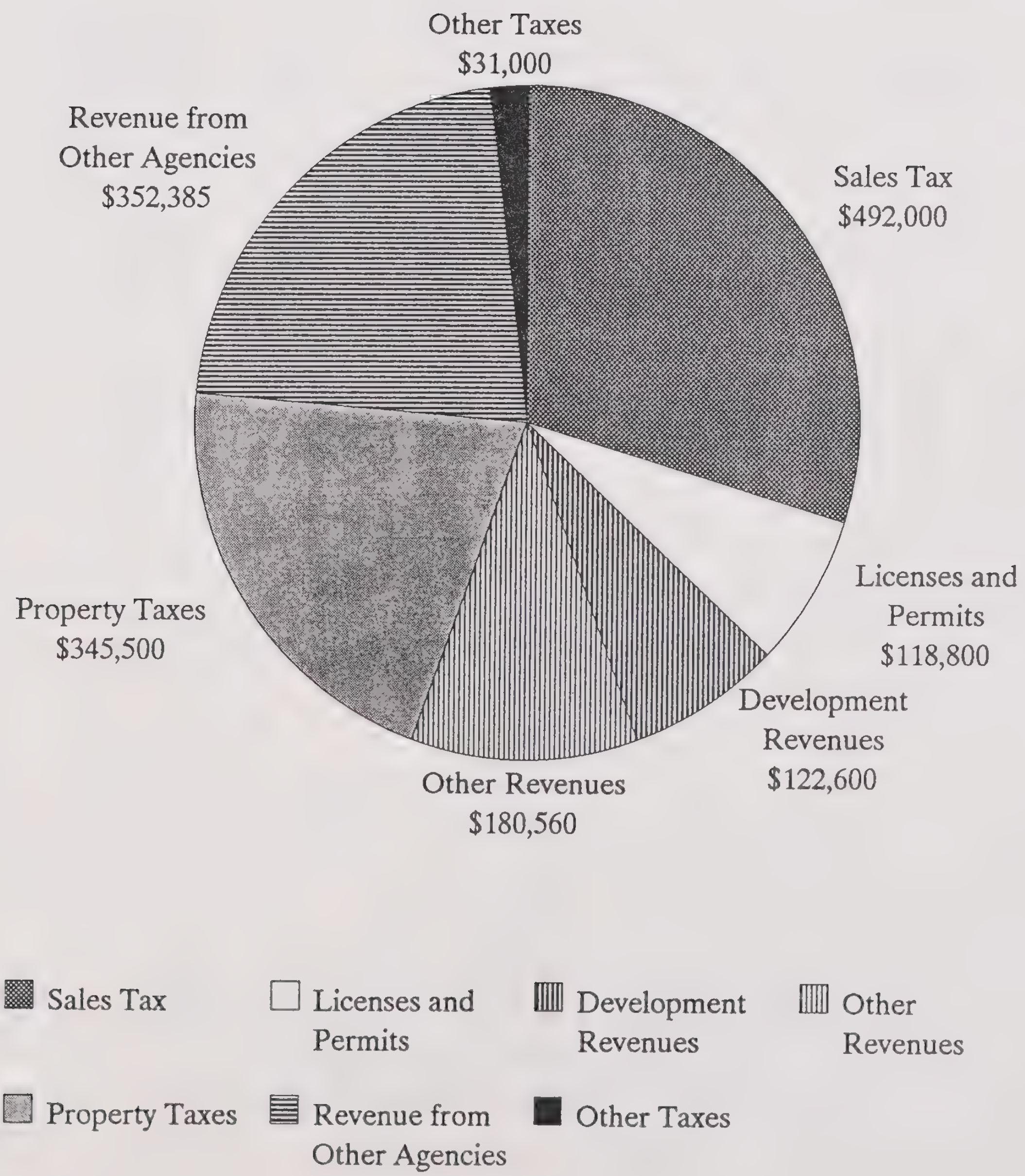


TABLE VI-6

ESTIMATED PATTERSON GENERAL FUND OPERATING EXPENDITURES

Revenue Sources	Actual 1988-89	Actual 1989-90	Percent Change	Percent of Total 1988-89 Allocation	Proposed 1990-91	Percent Change	Percent of Total 1990-91 Allocation
Taxes:							
Property Taxes	$278,528	$320,500	15.1	20.3	$345,500	7.8	21.0
Sales Taxes	408,949	460,000	12.5	29.2	492,000	7.0	30.0
Other	22,330	30,900	38.4	2.0	31,000	0.3	1.9
Licenses and Permits:							
Business Licenses	26,279	28,000	0.9	1.8	29,000	3.6	1.8
Other	68,574	84,390	23.1	5.3	89,880	6.5	5.5
Development Revenue:							
Development Improvements	11,323	14,600	28.9	0.9	14,600	0.0	0.9
Construction Permits	279,623	140,000	-49.9	8.9	100,000	-28.5	6.1
Engineering Fees	33,937	0	-100.0	0.0	8,000	100.0	0.5
Fines and Penalties	7,197	8,500	18.1	0.5	8,000	-5.9	0.5
Use of Money and Property	77,494	80,800	4.3	5.1	80,760	0.0	4.9
Revenue from Other Agencies:							
Motor Vehicle in Lieu Tax	234,521	290,000	23.7	18.4	320,000	10.3	19.5
Other Revenues	17,467	31,885	82.5	2.0	32,385	1.6	2.0
Charges for Current Services	47,822	54,400	13.8	3,5	57,800	6.3	3.4
Drainage and Lighting District	17,497	30,000	71.5	1.9	30,000	0.0	1.8
Other Revenues	43,105	4,200	-90.3	0.2	4,000	5.0	0.2
Total	**$1,574,921**	**$1,578,165**	**0.2**	**100.0**	**$1,642,925**	**4.1**	**100.0**

*Some revenue for these operations is generated from other funds

Source: City of Patterson Finance Department

Sales Tax

Sales tax revenue represents the City's largest source of income. Revenues from the sales tax accounted for $492,000 in the FY 1990-91, representing 30.0 percent of the total General Fund revenues. This allocation represents an increase of 7.0 percent over previous years.

Other Taxes

Other tax revenue sources in the General Fund include the real estate transfer tax of $30,000. It is anticipated that revenue collections in this area will remain static.

Revenue from Development

Revenues from development include development improvements, construction permits, and engineering fees. These revenues are paid directly to the City by developers. The revenues are anticipated to total $122,600 during FY 1990-91 and represent 7.5 percent of the total General Fund revenues.

Fines, Forfeits, and Penalties

Revenues from fines, forfeits, and penalties are projected to be $8,000, comprising 0.5 percent of the City's General Fund revenue. Revenues from this source decreased by 5.9 percent from FY 1989-90.

Use of Money and Property

Revenues from this source are generated by interest income, rent, and sale of property. In FY 1990-91, revenues from the uses of money and property are anticipated to be $80,760 which is 4.9 percent of the total General Fund revenues; this amount is level with the previous year.

Revenue from Other Agencies

General Fund revenues from other agencies include the motor vehicle in-lieu tax, which is generated by the state's vehicle license fees and is distributed to cities according to population. Revenue from this source is anticipated to be $320,000 during FY 1990-91, representing 19.5 percent of the total revenues. This amount represents an increase of 10.3 percent from previous years. Other revenues from other agencies include the cigarette tax, and reimbursements for police training, among others.

Charges for Current Services

Charges for current services (accident reports, street, sidewalk, and curb repair, special police and fire, and animal shelter fees) contributed $54,400 to the General Fund for FY 1989-90; this amount represents 3.5 percent of the total General Fund revenues. This revenue source is estimated to increase slightly to $57,800 during FY 1990-91.

Drainage and Lighting District

This fund represents a special assessment district created during FY 1987-88. FY 1990-91 revenues from this source are anticipated to be $30,000 and contribute 1.8 percent of total revenues.

Other Revenues

Other revenues include miscellaneous and unanticipated revenue sources (such as donations).

FINDINGS

- Patterson's employment is based primarily on agriculture and related services, followed by educational services, retail trade, and nondurable goods manufacturing, based on 1980 census information.

- Much of the increase in Patterson's retail sales from 1983 to 1989 can be attributed to its increased population. Taxable sales has fluctuated, rising in 1984 and 1985, and then decreasing in 1986 and rising again in 1987, 1988, and 1989.

- Due to its size and proximity to Modesto and other larger cities, Patterson experiences "leakage" of retail sales and related sales tax revenues to other cities. Purchases of convenience items and services by Patterson residents are provided primarily by local businesses.

- While residential development and the accompanying population growth generates property tax revenues and increased retail sales within the community, these gains are usually more than offset by the increased cost of police and other government services.

- The largest General Fund appropriation category is police, comprising 42.39 percent of the total general fund in the proposed FY 1990-91 budget. Other major items include: streets (15.72 percent); fire (8.98 percent); nondepartmental (6.83 percent); and planning/building inspection (6.38 percent).

- Sales taxes are the City's largest source of revenues, making up about 30.0 percent of the General Fund revenues. Other major revenue sources include: property taxes (21.0 percent); motor vehicle in lieu tax (19.5 percent); and construction permits (6.1 percent).

BIBLIOGRAPHY

California State Board of Equalization, *Taxable Sales in California (Sales and Use Tax)*, 1983-1987.

City of Patterson, *Audited Financial Statement, 1989-90/1988-89*

City of Patterson, *1990/91 Proposed Budget*

City of Patterson, Housing Element, 1985.

The Gateway, A Patterson Township Historical Society Bulletin, Volume 1, Number 1, June 1978.
Patterson-Westley Chamber of Commerce, *Community Economic Profile for Patterso*n, 1988.

Stanislaus County, *General Plan Support Document*s, 1987.

Stanislaus County Economic Development Corporation (SCEDCO), *Patterson Community Assessmen*t, 1987.

Stanislaus County Economic Development Corporation (SCEDCO), *Commuter Survey*, August 1988.

Target Industry Identification Report, Prepared for City of Patterson by Economic Development Services, July 1988.

PERSONS CONSULTED

Rod R. Simpson, City Planner, City of Patterson

Cumberland, Sheila, Accounting/Finance Officer, City of Patterson

Nachbar, John, City Manager, City of Patterson (through 5/91)

Schell, Wayne, President, Economic Development Services

CHAPTER V

TRANSPORTATION AND CIRCULATION

CHAPTER V

TRANSPORTATION AND CIRCULATION

INTRODUCTION

A city is both defined and constrained by the network of highways, roads, streets and transit services that move its residents and goods through and in and out of the city. Because of Patterson's size, mobility within the city is still relatively easy.

This chapter discusses Patterson's transportation system and services, including streets and roads, parking, public transit, air service, and rail service.

STREET AND ROADWAY SYSTEM

Regional Context

Patterson is located three miles east of Interstate 5, a major north-south transportation route through the Central Valley. I-5 connects with Interstate 580 approximately 15 miles north of Patterson, which provides access for commuters to the East Bay Area cities of Livermore and Dublin. State Route 33 provides north-south access to Westley to the north and Crows Landing to the south. Las Palmas Avenue provides the easterly connection to Modesto and Turlock via a bridge over the San Joaquin River.

Physical Constraints on the Street and Road System

Physical constraints on the City's circulation system are the natural and man-made local features that limit existing and future roadway connections and alignments, and thereby constrain the community's access and circulation capacity. The primary physical constraints on the city's circulation are:

- The Southern Pacific Railroad tracks which run parallel to Highway 33. These tracks limit the number of east-west street connections between the portions of the city on either side of the railroad line.

- The various canals and creeks which require bridge structures at each point where roadways cross them.

- Interstate 5 to the west of the city, which has only one interchange to enter or exit Patterson along Sperry Avenue.

- The San Joaquin River to the east, with the Las Palmas bridge as its only crossing to and from Patterson.

Functional Classification of Roadways

The street system which serves a city can be described in hierarchical fashion, relating to the functional classification of the streets and highways.

Patterson's street system can be classified according to four basic functional types of roadways:

- Local Service Roadways provide immediate access to properties, are likely to be discontinuous in alignment, and generally carry very light traffic volumes. Those streets not identified with the other three street classifications described below fall into this functional classification.

- Collector Roadways are fed by local service road-ways, provide local circulation options, provide connections to other roadways, and generally carry light to moderate traffic volumes. Included in this functional classification are the following streets:

Ivy Avenue	Orange Avenue
"M" Street	Hartley Street
Walnut Avenue	Locust Avenue
Salado Avenue	First Avenue
"E" Street	Ninth Street
Del Puerto Avenue	Las Palmas Avenue (west of Second Street)
Ward Avenue	

- Arterial Roadways are fed by local service and collector roadways, provide intra-city circulation routes and connections to regional roadways, and generally carry relatively heavy traffic volumes. Included in this functional classification are the following streets:

  Las Palmas Avenue (east of Second Street)
  Second Street (State Route 33)
  Sperry Avenue

- Freeways are fed by collector and arterial roadways, provide intra-city and inter-city travel, provide connections to other regional highways, and are capable of carrying heavy traffic volumes. Interstate 5 serves this function in the Planning Area.

This hierarchy of streets is a general guide to the classification of streets which make up the circulation system of a city. Often a street serves a dual function, such as providing both arterial and collector service. Therefore, it is sometimes difficult to provide a definitive classification. In addition, the width of a roadway does not always correspond directly to its function in the overall circulation system, though the wider roadways tend to have more regional functions within the circulation system.

The city's existing street system is shown in Figure V-1, discriminated by functional classification as applied by the Consultant Team. The City's Street and Circulation Plan currently shows collectors, major streets, industrial streets, and the Las Palmas parkway facility. The streets listed above are all shown on the Circulation Plan, but the functional classification system used herein combines the major, industrial, and parkway facilities into the single classification of arterial roadways.

Roadway Widths and Physical Characteristics

The local service and collector roadways in the original portion of the city (west of Second Street, east of Ninth Street, north of Sperry Avenue, and south of M Street) generally have right-of-way widths of 80 feet, with pavement widths of 52 feet.

Figure V-1

FUNCTIONAL ROADWAY CLASSIFICATIONS

Freeway

Arterial

Collector

All Others Local

Source: Joseph R. Holland, Consulting Traffic Engineer, 1988.

Scale in Feet

Base Map prepared by Linn Garcia Davis July 1988

N

Patterson Planning Area

Streets which lie outside of the original portion of the city have generally been constructed to the City's cross-section improvement standards for the type of roadway involved (i.e., collector, major, industrial, and parkway). Figures V-2, V-3, and V-4 show the City's current standard street cross sections.

The traffic-carrying capacity of city streets are typically quantified in terms of the ability of the various intersections to accommodate peak-hour traffic volumes. Peak hours are the times of highest traffic flows, which generally occur during morning and evening commute hours. The intersections are the critical "valve" points in the street system, where right of way assignment for conflicting traffic flows is accomplished by intersection controls (e.g., signals or STOP and YIELD signs). Roadway segments with unusual characteristics, such as freeways with multiple interchanges or narrow bridges can also be traffic-limiting points. Roadways with these characteristics are not problems in Patterson.

For planning purposes, it is possible to estimate approximate daily traffic volume levels which are associated with the peak-hour traffic-carrying ability of the various types of streets. The ultimate "capacity" of a street is the maximum level of traffic which a street of a given width (number of lanes) can carry in a specified time period (per hour or per day) without resulting in extreme congestion during the peak traffic loading periods of the day. These maximum flow conditions are generally considered unacceptable, however, and special criteria are therefore used to identify lower traffic volume levels which have better (more free-flowing) peak period traffic conditions. These criteria, called "Level of Service" criteria, generally reflect traffic speeds and the percentage of the roadway's "capacity" used by the traffic.

For urban roadways, the proportion of capacity used, or volume-to-capacity (V/C) ratio, is usually the primary criterion used to characterize the levels of service. Service levels are identified by the alphabetic characters A, B, C, D, E, and F, with A representing the best (most free-flowing) peak period traffic conditions and F representing the worst conditions, with traffic volumes in excess of hourly capacity levels.

Each of these levels has a corresponding V/C ratio. The level of traffic volumes which fill the maximum capacity of a roadway is assumed to have a V/C ratio of 1.00. A roadway operating at maximum capacity of a roadway is typically assumed to be the highest end of Level of Service "E", representative of heavily congested conditions. By definition, a V/C ratio cannot exceed 1.00. Because daily roadway capacities are calculated based on typical peaking characteristics, however, it is not unusual to find such an occurrence.

Level of service definitions can be used to describe traffic operating conditions on both roadway segments and intersections. Table V-1 provides a description of the various levels of service and the V/C ratio associated with each.

TABLE V-1

LEVEL OF SERVICE CRITERIA

Level of Service	V/C Ratio Range	Conditions
A	< 0.61	Minimum delay
B	0.61 - 0.70	Increasing delay
C	0.71 - 0.80	with increasing
D	0.81 - 0.90	V/C ratio
E	0.91 - 1.00	High delay
F	> 1.00	Excessive delay and backups

Source: Joseph R. Holland, Consulting Traffic Engineer, based on "Highway Capacity Manual", 1985.

Traffic conditions up to Levels of Service C or D are frequently considered to be within the range of acceptable congestion or delay for urban communities. In relatively smaller communities, however, there is frequently an aversion to almost any measurable level of delay as being incompatible with the character of the community. Heavier traffic levels and congestion will usually be tolerated for short periods during special occasions or local celebrations, but not on a regular, day-to-day basis. In such cases, it is not unusual for traffic conditions of Levels of Service A or B to be cited as the worst conditions which are acceptable to local motorists.

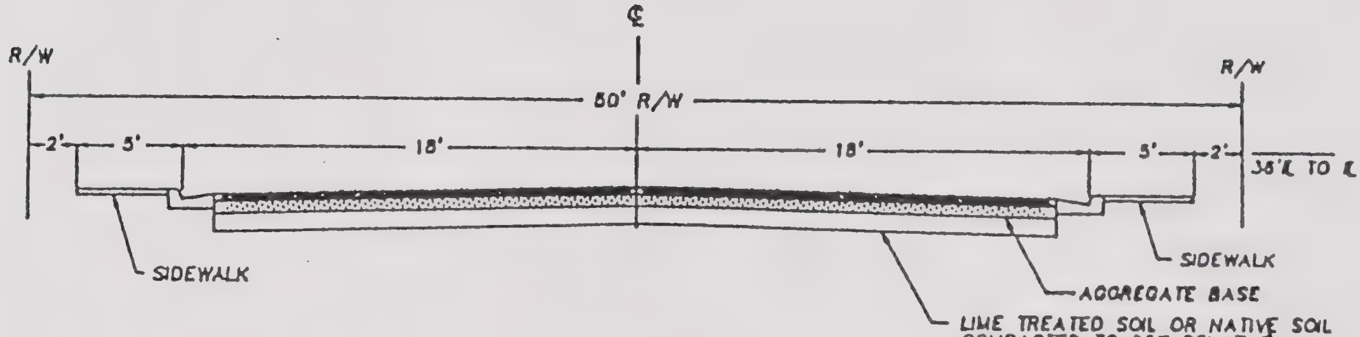
Table V-2 presents daily traffic volume levels associated with Levels of Service A through E for two-lane and four-lane streets. The volumes shown apply to collector or arterial streets when they are considered to be the major streets at intersections with other streets. Even lower volumes apply to streets when they are considered to be the minor streets at intersections.

It should be noted that these are generalized approximations and should be used only as rough guidelines. Many factors associated with particular streets could increase or decrease these values proportionately, such as the width of traffic lanes, the relative amount of cross-traffic at intersections, the presence or absence of curb parking along the street, the presence or absence of left-turning lanes at intersections, etc.

Figure V-2

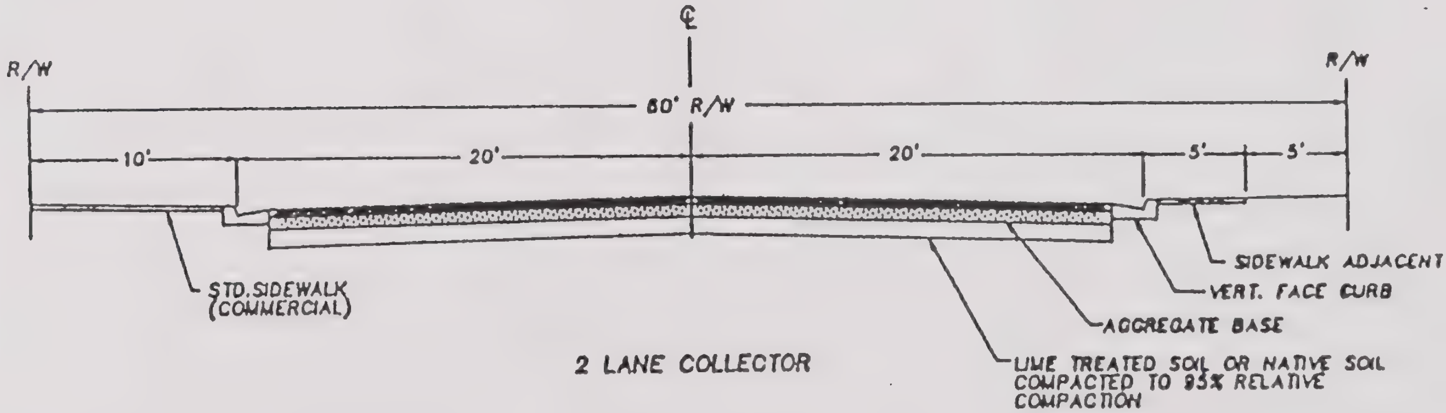
STREET STANDARDS

Minor Street and Two-Lane Collector



MINOR
CUL-DE-SAC,DEAD END & SERVICE ROADS

TYPICAL STREET SECTIONS

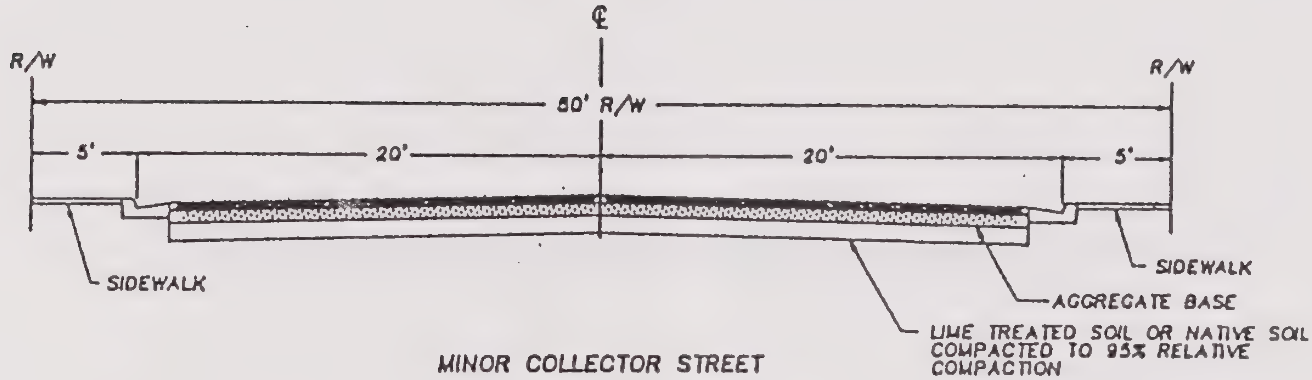


2 LANE COLLECTOR

Figure V-3

STREET STANDARDS

Minor Collector Street and Las Palmas Parkway



TYPICAL STREET SECTIONS

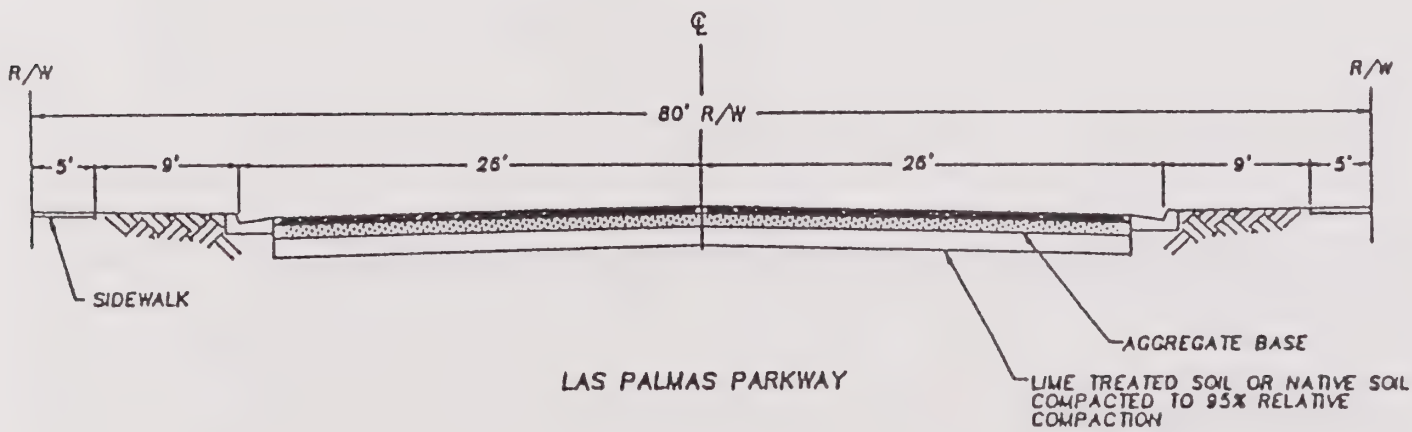
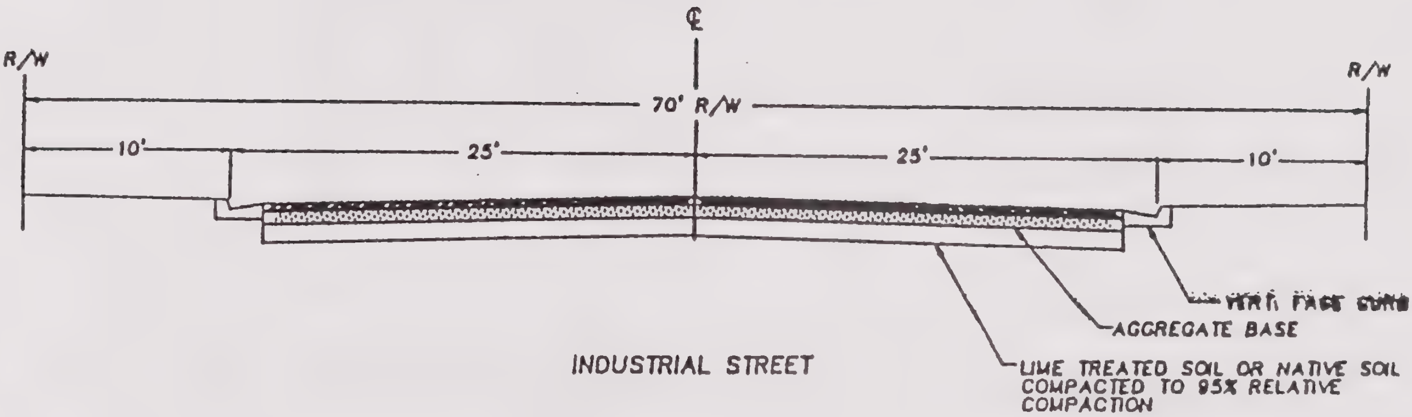


Figure V-4

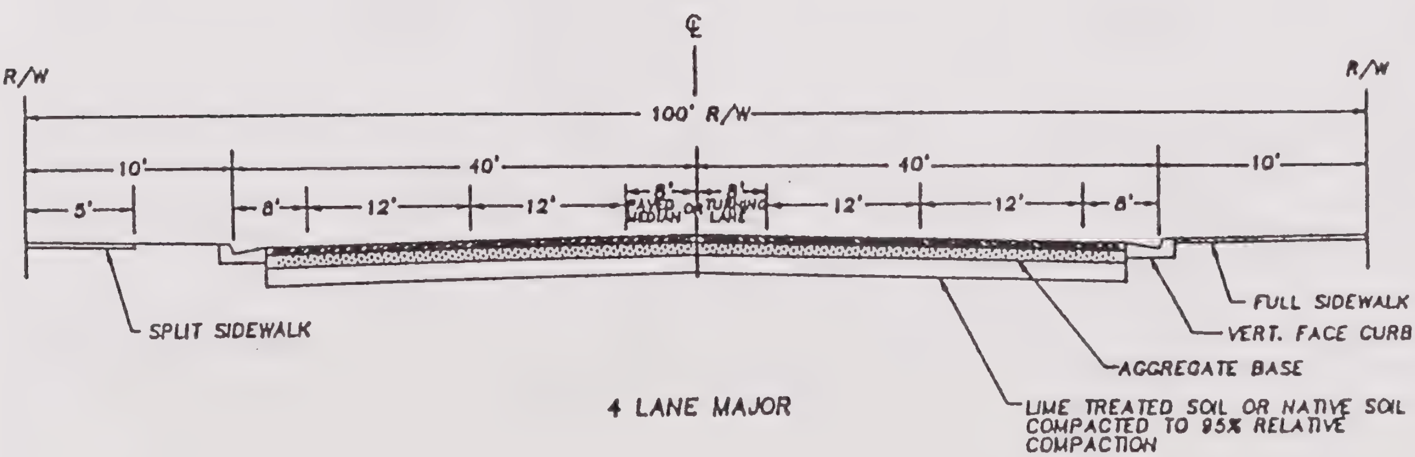
STREET STANDARDS

Industrial Street and Four-Lane Major Street



INDUSTRIAL STREET

TYPICAL STREET SECTIONS



4 LANE MAJOR

TABLE V-2

MAXIMUM DAILY TRAFFIC VOLUMES
ASSOCIATED WITH EACH LEVEL OF SERVICE

Level of Service	Maximum V/C Ratio	Maximum 2-Way Volume (vpd) Two-lane Street	Four-lane Street
A	0.60	7,500	15,000
B	0.70	8,750	17,500
C	0.80	10,000	20,000
D	0.90	11,250	22,500
E	1.00	12,500	25,000

Source: Joseph R. Holland, Consulting Traffic Engineer based on assumed standard facility design and usage

Signalized Intersection Controls

There are presently no intersections within the city which are controlled by traffic signals.

Traffic Volume Levels

Traffic volume levels on Patterson's streets range from a few hundred vehicles per day (vpd) on local service streets to 5,000 to 10,000 vpd on portions of State Route 33 and Las Palmas Avenue. The heaviest traffic volumes were recorded at East Las Palmas just east of the railroad tracks, at 10,200 vpd. Table V-3 summarizes the traffic volumes measured on selected streets in Patterson. The daily traffic volume levels on the major city streets are presented in Figure V-5.

Traffic volumes on Interstate 5 north and south of the Del Puerto Road/Sperry Road interchange averaged 25,500 to 26,000 vehicles per day in 1990, according to Caltrans.

TABLE V-3

TRAFFIC VOLUMES ON SELECTED STREETS

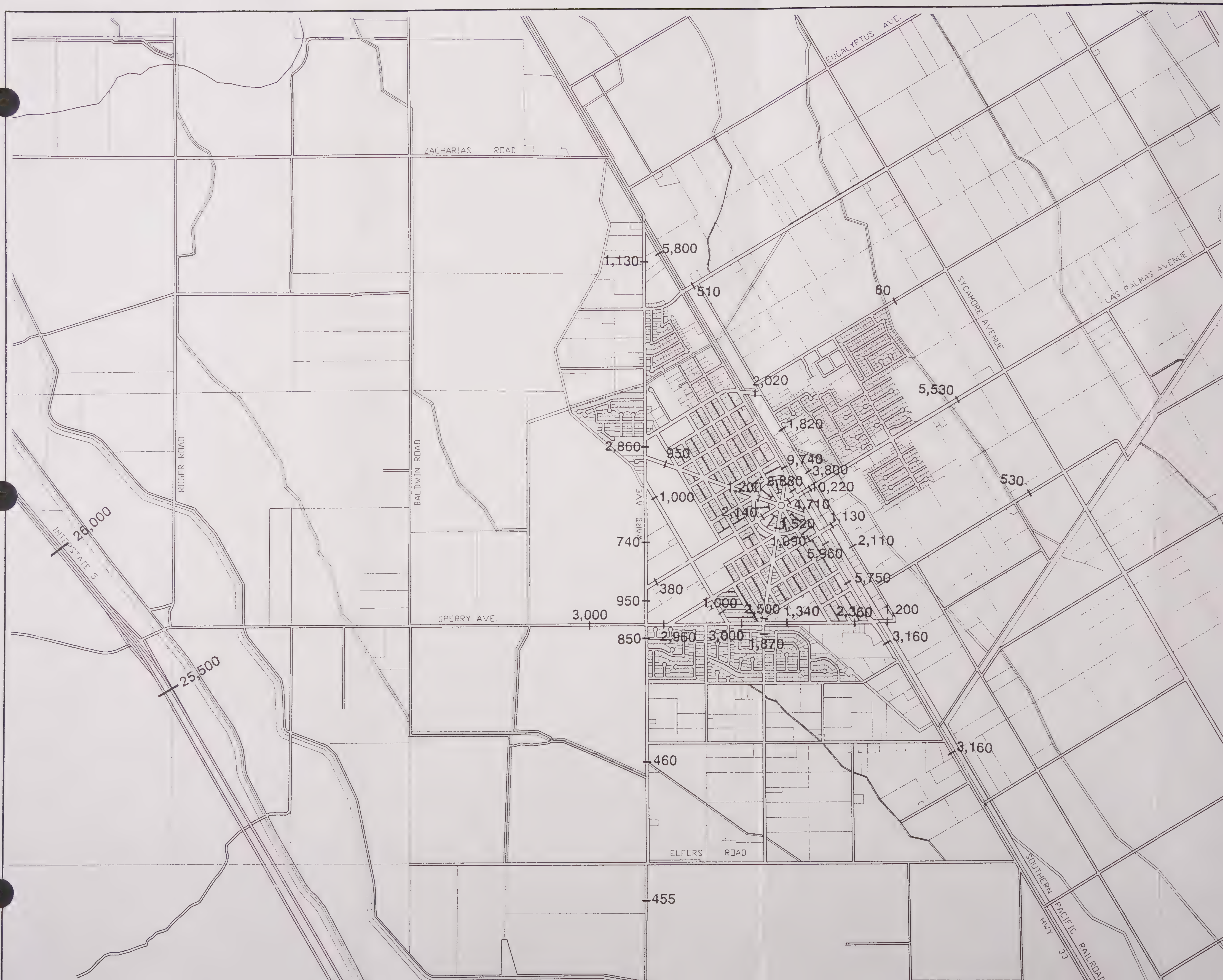
Roadway	Traffic Volumes (Vehicles per day)
East Las Palmas Avenue	5,500 - 10,200
West Las Palmas Avenue	380 - 2,140
Second Street (Highway 33)	3,160 - 9,740
First Street	1,820 - 3,800
Salado Avenue	950 - 1,200
Del Puerto Avenue	1,520 - 2,500
Sperry Avenue	1,340 - 3,000
Ward Avenue	740 - 2,860
9th Street	1,000
E Street	1,100

Source: City of Patterson Police Department, November 1990

Traffic Generation Rates

In this context, a trip is defined as a one-way vehicle movement which either begins or ends within the site of the land use being considered. Daily and peak hour trip rates are shown in Table V-4 for several different land use types. These rates represent the number of "trip ends" (including the arrival end and the departure end of trips) which the given land uses will generate per unit of measure indicated (i.e., per dwelling unit, per acre, or per 1,000 square feet of floor space).

The peak hour trips generated by a given land use are those trips which are likely to occur during the highest one-hour period of traffic activity on the adjacent streets during the afternoon peak period (generally 4 to 6 p.m.) on weekdays. These peak hour trips are included in the daily trip rates for each land use shown. The amount of traffic generated in the peak hour varies somewhat by land use type. Overall, the peak hour volume on a given street is typically about 10 percent of the daily traffic volume carried by the street.



0' 500' 1,000' 2,000' 3,000'

N

BASE MAP PREPARED BY LEW-GARCIA-DAVIS — SEPTEMBER, 1990

City of Patterson

Figure V-5

AVERAGE DAILY TRAFFIC COUNTS
(Vehicles per Day)

Sources: City of Patterson Police Department, November 1990;
California Department of Transportation, 1990

TABLE V-4

TYPICAL TRIP GENERATION RATES

Rate Land Use nds)(TripEnds)	Type	Per	Daily Rate (Trip Ends)	P.M.Peak Hour (Trip Ends)
Residential	Single family	DU[1]	10.00	1.00
Residential	Multi-family	DU	6.10	0.70
Residential	Mobilehome	DU	4.80	0.59
Office	25% FAR[2]	Acre	133.90	24.00
Office	40% FAR	Acre	214.30	38.30
Market		1,000 sf[3]	125.50	8.82
Discount Store		1,000 sf	70.10	3.79
Commercial	<50,000 sf	1,000 sf	117.90	14.42
Commercial	50,000-100,000 sf	1,000 sf	82.00	7.80
Commercial	100,000-200,000 sf	1,000 sf	66.70	5.90
Commercial	200,000-300,000 sf	1,000 sf	50.60	4.80
Restaurant	Fast food	1,000 sf	553.00	31.60
Restaurant	Coffee Shop	1,000 sf	164.40	10.50
Restaurant	Quality	1,000 sf	74.90	6.14
Industrial	Light	Acre	52.40	10.10
Industrial	Heavy	Acre	15.60	2.20
Industrial	Warehouse	Acre	56.10	18.80
Motel		Occupied Room	10.05	0.70
Retirement Community		DU	3.03	0.40
Service Station		Pump	133.00	3.60
Convenience Market		1,000 sf	625.00	46.70

[1]Dwelling Unit
[2]Floor Area Ratio (Square feet of floor space as percentage of site area)
[3]Square feet

Source: *Trip Generation*, Institute of Traffic Engineers, 1982

Traffic Accident Patterns

In calendar year 1989 there were 62 reported traffic collisions within the city of Patterson. This is down slightly from the 87 reported collisions in 1988. In 1987, 78 traffic collisions were reported. Table V-5 presents a tabulation of the traffic collisions reported in recent years by type of collision and by severity (fatality, injury, or property damage only).

These data indicate a gradual increase in the total number of reported accidents from 1985 to 1988 and a slight decline in 1989. It appears that this reduction in accidents is only temporary, because there were

already 63 reported accidents through the third quarter of 1990. (1990 total for the year were not available at time of publication.)

Table V-6 presents another tabulation for the same accidents with a break-down of the primary contributing circumstance and the severity. These data indicate that at least eight percent of the traffic collisions which occurred within the City in 1989 had alcohol or drug impairment as a primary contributing circumstance. For 1989, the largest category of known contributing circumstance involves improper turning. The second largest category is unsafe unsafe starting or backing.

The six intersections with the highest number of reported traffic collisions at or in the vicinity the intersection in 1989 are presented in Table V-7. As shown, each of these intersections had two to four accidents in 1989. Several other intersections had only one accident during 1989. Of the 62 accidents reported in Patterson during the first three quarters of 1989, 17 (27 percent) occurred on Highway 33.

Regional Plans

The Stanislaus Area Association of Governments (SAAG) completed a countywide expressway study. This study, prepared by Fehr & Peers in consultation with the SAAG Expressway Advisory Committee, the SAAG Technical Committee, and the SAAG Policy Board, recommends a comprehensive system of expressways. The study defines an expressway as "an arterial highway with at least partial control of access, which may or may not be divided or have grade separations."

The SAAG study states that the city of Patterson would benefit from a bypass of Las Palmas and the downtown area. It also states that the maximum facility that might be needed by the year 2011 is a four-lane expressway. The study shows the recommended expressway with a generalized alignment which swings south of the existing city area, connecting on the east with E. Las Palmas Avenue at some point west of the San Joaquin River, and connecting on the west with Sperry Avenue at some point west of Ward Avenue. The expressway is shown extending all the way to Interstate 5, with a possible upgrade of the I-5/Sperry interchange.

The expressway system recommended by the SAAG *Expressway Study* includes a four-lane expressway along the south side of Patterson. The kind of expressway proposed by the SAAG study is described as having minor access restrictions, but allowing left-turns to and from occasional collectors. Major streets are signalized, with 55 percent to 65 percent of the green time allotted to the expressway. It is similar to a major arterial, but the access controls and preferential treatment at intersections gives it about 20 percent more capacity than an arterial with the same number of lanes. Right-of-way width required for this type of expressway is about 110 feet.

Parking

The City completed a *Downtown Parking Study* in May 1989, which documented the city's parking supply and existing and potential future demand in the downtown area. The findings of the *Parking Study* are summarized below:

- There are a total of 601 parking spaces downtown, with an additional 68 spaces on the outer curb of El Circulo at the fringe of downtown, for a total of 669 spaces available to serve the parking demands of downtown.

- Of the 669 total spaces, 417 are on-street spaces and 252 are off-street spaces. Of the off-street spaces, 48 are marked for private use and 204 are available for customer use.

- Of the on-street spaces, most do not have time limits; only 44 spaces do have time limits (40 at two-hour limits, 2 at 30-minute limits, and 2 at 15-minute limits).

- The peak number of spaces occupied as observed during the study was 382, approximately 57 percent of the available parking spaces. Maximum parking space occupancy occurred between noon and 1 p.m. When the maximum spaces occupied in each block at any time of the day (not necessarily at the same time) was considered, the maximum spaces occupied in downtown totalled 402 spaces, or about 63 percent of available spaces.

- The average length of time a vehicle parked was 1.8 hours in on-street spaces, and an average of 2.1 vehicles used each space between 9 a.m. and 5 p.m. Overall, spaces downtown were occupied 48 percent of the time.

- Portions of downtown experienced much higher than average parking demands and occupancy levels. These areas include most of the southern portion of downtown, most of the on-street spaces along both sides of El Circulo (except between Salado and North Third), and most of the spaces on the outer side of the Plaza.

- Parking demand downtown could increase significantly if new development is allowed to occur without providing on-site parking to meet its parking demands.

- At theoretical parking demand levels, occupancy of presently vacant or underutilized floor space downtown could increase parking demand by approximately 95 spaces. Development of presently vacant parcels could increase parking demand by approximately 445 spaces. Redevelopment of certain parcels could increase parking demand by approximately 135 spaces.

- At theoretical demand levels, there could be a deficit in parking supply downtown by approximately 430 spaces.

- Parking space deficits could be eased by implementing one or more of the following strategies;

  a. Require new development to provide on-site parking adequate to accommodate the added parking demands it will generate

  b. Develop one or more of the presently vacant parcels as a public parking lot(s) and allow the remaining vacant parcels to develop without on-site parking

  c. Develop one or more of the presently vacant parcels as a public parking lot(s) and allow the remaining vacant parcels to develop with on-site parking

TABLE V-5

CITY OF PATTERSON
TYPES OF TRAFFIC COLLISIONS AND SEVERITY

	---- 1985 ----		---- 1986 ----		---- 1987 ----		---- 1988 ----		---- 1989 ----	
Motor Vehicle versus:	Prop. Damage Only	Injury	Prop. Damage Only	Injury	Prop. Damage Only	Fatal or Injury	Prop. Damage Only	Fatal or Injury	Prop. Damage Only	Fatal or Injury
Pedestrian	-	1	1	2	-	2	-	3	-	-
Bicycle	-	-	-	1	2	2	1	2	-	3
Parked Motor Vehicle	7	2	11	3	9	-	13	-	13	-
Other Motor Vehicle	29	8	26	17	37	12	44	11	32	9
Fixed Object	4	-	3	2	7	3	10	1	3	1
Other Object	-	1	2	1	2	1	2	-	-	-
Non-collision	-	-	2	1	-	1	-	-	-	-
Other	2	-	-	1	-	-	-	-	-	1
Subtotals	**42**	**12**	**45**	**28**	**57**	**21**	**70**	**17**	**48**	**14**
All accidents	54		73		78		87		62	

Source: SWITRS, California Highway Patrol, 1985, 1986, 1987, 1988, and 1989.

TABLE V-6

CITY OF PATTERSON TRAFFIC COLLISIONS
CONTRIBUTING CIRCUMSTANCES AND SEVERITY

Motor Vehicle versus:	---- 1985 ---- Prop. Damage Only	Injury	---- 1986 ---- Prop. Damage Only	Injury	---- 1987 ---- Prop. Damage Only	Fatal or Injury	---- 1988 ---- Prop. Damage Only	Fatal or Injury	---- 1989 ---- Prop. Damage Only	Fatal or Injury
Alcohol/drugs	1	2	3	3	3	5	7	-	3	2
Unsafe speed	3	1	6	2	5	7	10	2	7	3
Following too closely	-	-	-	1	1	-	1	-	1	-
Wrong side of road	1	-	1	1	1	1	5	-	1	-
Improper passing	1	-	1	-	3	-	1	-	2	-
Improper turning	7	-	9	3	12	3	11	-	11	3
Unsafe lane change	-	-	2	-	1	-	-	-	1	-
Auto or ped. right-of-way	13	6	8	6	6	3	14	10	4	5
Other improper driving	1	-	-	2	1	-	1	-	-	-
Hazardous parking	1	-	-	1	-	-	1	-	-	-
Unsafe starting or backing	5	-	11	4	19	1	14	2	12	-
Signals and STOP signs	3	1	-	2	1	1	2	3	1	1
Other than driver	1	1	1	1	1	-	-	-	-	-
Equipment (brakes, etc.)	2	1	1	-	2	-	-	-	3	-
Pedestrian violation	-	-	-	1	-	-	-	-	-	-
Other	1	-	2	1	1	-	2	-	-	-
Unknown	2	-	-	-	-	-	1	-	2	-
Subtotals	**42**	**12**	**45**	**28**	**57**	**21**	**70**	**17**	**48**	**14**
All accidents	**54**		**73**		**78**		**87**		**62**	

Source: SWITRS, California Highway Patrol, 1985, 1986, 1987, 1988, and 1989

TABLE V-7

CITY OF PATTERSON
HIGHEST TRAFFIC ACCIDENT INTERSECTIONS IN 1987

Intersections	1987 Accidents
Highway 33 and M Street	4
N. Salado Avenue and Plaza	3
E. Las Palmas and Hartley Street	2
Las Palmas Avenue and Highway 33	2
S. Salado Avenue and Highway 33	2
N. Salado Avenue and Ward Avenue	2

Source: SWITRS, California Highway Patrol, 1989

Existing and Potential Problem Areas

Existing daily traffic volumes are, for the most part, within the traffic-carrying capacity of Patterson's streets; however, future new development could result in traffic increases which might produce traffic problems at some locations, depending on the location, amount, and type of land uses involved.

There are several areas within the city's circulation system which have been identified during the background investigations as having the potential for future traffic problems. These include:

- Traffic operations and safety within the Plaza traffic circle;
- Traffic operations and safety at the numerous five and six way intersections along Salado and Del Puerto Avenues; and
- Traffic operations at several key intersections within the city and the potential need for signalization or other traffic control devices.

Recently, stop signs have been installed at the six way intersections at Salado and Del Puerto Avenues, creating six-way stops in an effort to increase safety at these intersections.

While there appears to be adequate parking supply overall to accommodate the existing parking demand, there are some areas where peak demand levels have resulted in a perception of parking and safety problems. Future development will need to include the provision of enough parking spaces to adequately accommodate its parking demands, so that the existing parking conditions are not aggravated.

PUBLIC TRANSIT

Intercity bus service is provided by Greyhound Bus Lines, with a terminal in Modesto. Stanislaus County Transit provides intercity service within the county, serving Patterson through its West Side Dial-a-Ride. The service is a quasi-private entity subsidized by the cities it serves.

The Senior Opportunity Services Program (SOSP) offers local transportation to the elderly in Patterson. The City dispatches these units which provide door-to-door service. Trips are limited to the area within the city limits.

No taxi service is presently available in Patterson.

AIR SERVICE

Patterson Airport

Patterson Airport is a private airport located on the north side of Sperry Road immediately east of the Delta-Mendota Canal, with services available to the public. The airport includes one 2,500 by 75 foot north-south runway, of which the northern 665 feet is paved. The airport is an uncontrolled airway with no control tower. It is limited to crop dusting operations.

Crows Landing Auxiliary Naval Landing Field

The Crows Landing Naval Air Station is located about two miles northwest of the town of Crows Landing and about one mile south of the Patterson's southern city limits. Crows Landing functions as an auxiliary landing field for operations from Moffett Field, Lemoore Naval Air Station, Alameda Naval Air Station, Castle Air Force Base, the Air National Guard, and the National Aeronautics and Space Administration (NASA). Crows Landing serves as an important training and testing facility for the air operations of other air stations impacted by their volumes of air traffic or by urban encroachment.

Facilities include two concrete-paved runways in an "X" configuration. Operations and personnel support facilities occupy about 30 acres of the station's total of 1,528 acres.

Operations at Crows Landing are primarily training and air field practice of experienced pilots. Most of the operations occur Monday through Friday during day hours, although the air field occasionally operates weekend and nighttime flights. Most aircraft are light jet or multi-engine jet airplanes. Large planes, such as the Casey 135 Tanker and Weather Reconnaissance aircraft, are flown about six to seven times a year. Annual operations for 1987 were approximately 30,000 to 33,000 take-offs and landings over a 255-day flight year (excludes most weekends and holidays). Crows Landing averages six night operations a year.

Commercial Air Service

Commercial air service is available to residents of the Planning Area via Modesto City-County Airport (Harry Sham Field), approximately 16 miles east of Patterson. Commercial carriers include American Eagle with service to Los Angeles, San Francisco, and Bakersfield, and United Express, with connections to Fresno, San Francisco, and Burbank.

Stockton Airport, about 30 miles northeast of Patterson, provides commercial air service to Denver via Continental Airline, to Fresno, San Francisco, and Burbank via United Express, and to Los Angeles via USAir.

RAIL SERVICE

The Southern Pacific Railroad line runs through Patterson, adjacent to Highway 33. The line runs north to Tracy, with east-west connections, and south to Fresno, with multiple rail connections. Southern Pacific Transportation Company operates freight trains along this line. An average of one to two trains daily pass through Patterson.

An AMTRAK passenger train station is located in Denair, about 20 miles east of Patterson. Trains run twice daily in each direction up and down the San Joaquin Valley. Major destinations include Merced, Fresno, and Bakersfield to the south (with bus connections to Los Angeles from Bakersfield) and Stockton, Antioch, and Martinez, and Oakland to the north, with bus connections in Stockton to Sacramento and San Jose.

FINDINGS

- Patterson's street system has a number of man-made and natural barriers to the orderly and efficient development of a local circulation system. These obstacles include:

  - the difficulty and cost of widening streets in areas of existing development;

  - the limited alternatives for effectively increasing the north-south and east-west traffic-carrying capacity of the street network;

  - the difficulty and cost of making street extensions and connections is a result of barriers, such as the railroad and canals; and

  - the lack of adequate, undeveloped sites for additional public parking facilities in areas of highest existing and future parking demands.

- Existing daily traffic volumes are generally within the traffic-carrying capacity of Patterson's streets. The highest traffic volumes are experienced at East Las Palmas Avenue and Second Street.

- Potential future problems with traffic operations and safety exist at the Plaza traffic circle and the numerous five and six way intersections along Salado and Del Puerto Avenues.

- Public transportation in Patterson is limited to Westside Dial-A-Ride. Intercity bus service is available to Patterson residents by Greyhound, with a station located in Modesto.

- Patterson Airport is a private airport located in the Planning Area which is limited to crop spraying operations. Modesto and Stockton Airports provide the nearest passenger air transportation for Patterson residents. The Crows Landing Naval Auxiliary Field south of Patterson is used for military test and practice flights.

- The Southern Pacific railroad line runs through Patterson. Approximately one to two freight trains pass through Patterson daily. Patterson residents have access to AMTRAK passenger trains from a station in Denair.

BIBLIOGRAPHY

California Department of Transportation, *1987 Traffic Volumes on California State Highways*, 1987.

City of Patterson, *Downtown Parking Study*, May 25, 1989.

Highway Capacity Manual, 3rd Edition, (TRB Special Report 209), Transportation Research Board of the National Research Council, 1985.

Statewide Integrated Traffic Records System (SWITRS) Traffic Collision Report for the City of Patterson, California Highway Patrol, 1985, 1986, and 1987.

Trip Generation - Fourth Edition, Institute of Transportation Engineers, 1987.

Stanislaus Area Association of Governments, *Stanislaus County Regional Expressway Study*, prepared by Fehr & Peers Associates, March 1990

Stanislaus County, *General Plan Support Documents*, 1987.

Stanislaus County Airport Land Use Commission, *Airport Land Use Commission Plan*, 1978.

Stanislaus County Economic Development Corporation, *Patterson Community Assessment*, May 1987

PERSONS CONSULTED

Kelley, Dan, Lieutenant Commander, Crows Landing Naval Auxiliary Landing Field

GLOSSARY

ADT - Average daily traffic volumes

Caltrans - California Department of Transportation

Level of Service - An indication of the peak hour traffic conditions which are experienced on a given street with the particular traffic-carrying capacity of the street and a given amount of traffic using the street; this is typically defined by a range of volume to capacity ratios, designated by the alphabetic characters A, B, C, D, E, and F.

Right-of-Way - The width of publicly-dedicated streets, including the pavement, sidewalks, and planting area; the width of publicly-owned property for public projects.

Roadway Capacity - The maximum amount of traffic which a street can carry in a given amount of time without reaching unstable (or forced flow) traffic conditions; usually expressed as "vehicles per hour."

SAAG - Stanislaus Area Association of Governments, a regional planning agency which addresses transportation problems and other issues.

Volume to Capacity Ratio - The ratio of the volume of traffic carried by street to the street's traffic-carrying capacity; used to determine the applicable level of service for a street at a given traffic volume level; abbreviated as V/C.

CHAPTER VI

PUBLIC FACILITIES AND SERVICES

CHAPTER VI

PUBLIC FACILITIES AND SERVICES

INTRODUCTION

City development is dependent on a complicated network of public facilities and services. Each type of service has a unique set of constraints and must adapt to growth and change differently. This chapter focuses primarily on water, sewage collection and treatment, drainage, schools, fire protection, and law enforcement, describing the various systems and their capacities and discussing their implications for the general plan.

Transportation facilities and services are discussed separately in Chapter V and parks and recreational facilities are discussed in Chapter VII.

GENERAL GOVERNMENT

Patterson is a general law city, operating under a council/manager form of government. The City Council includes the Mayor, who is directly elected to a two-year term, and four city council members, who are elected at-large for staggered four-year terms.

The City has created three advisory commissions and committees with specific decisionmaking responsibilities.

- Planning Commission - Five-member body appointed by the City Council which advises the City Council on land use and zoning matters.

- Recreation Commission - Five-member body, appointed jointly by the City Council and Patterson Unified School District, which advises the City Council on the development and operation of park and recreational facilities and on the management of recreation programs.

- Beautification Committee - Eleven-member body appointed by the Mayor which advises the City Council and Planning Commission on horticultural matters, beautification, and the City's tree planting ordinance.

The administration of the City is organized into several departments which are directed by the City Manager: Planning, Recreation, Public Works/Engineering, Utilities, City Clerk, Police, and Fire. The city organizational structure is shown in Figure VI-1.

City operations are concentrated in two facilities. The fire and police stations operate out of the original city hall building at 344 West Las Palmas Avenue. This building also houses the City Council chambers. The City's administrative offices are located at 33 South Del Puerto Avenue, a temporary leased facility. The City collects a facilities fee on new development for the construction of new city facilities. The City's corporation yard is located on South 4th Street at B Street.

Figure VI-2 shows the location of these and other public and quasi-public facilities.

WATER SERVICE

Domestic Water Supply

The City of Patterson owns and operates the major water system in the Study Area. The water system provides water service to all residents in the city as well as commercial and industrial users. In addition, Patterson Frozen Foods has its own wells to supply water for its industrial processing. Residences in the unincorporated Study Area rely on private wells for their water supply.

The City's water system includes five wells and a network of distribution lines consisting of two-inch, four-inch, six-inch, eight-inch, and ten-inch diameter pipes. Figure VI-3 shows the location of the City's wells and main distribution lines. Water from the City's wells is of good quality and meets federal drinking water standards. Table VI-1 shows the production capacity for each of the City's wells.

TABLE VI-1

WELL PRODUCTION CAPACITY

Well No.	Production Capacity (gpm)
1	360
2	770
3	410
4	940
5 (variable)	200 - 2,000
Total	**2,680 - 4,480**

Sources: *Water System Master Plan*, City of Patterson, 1984, and City of Patterson Public Works Department, 1990

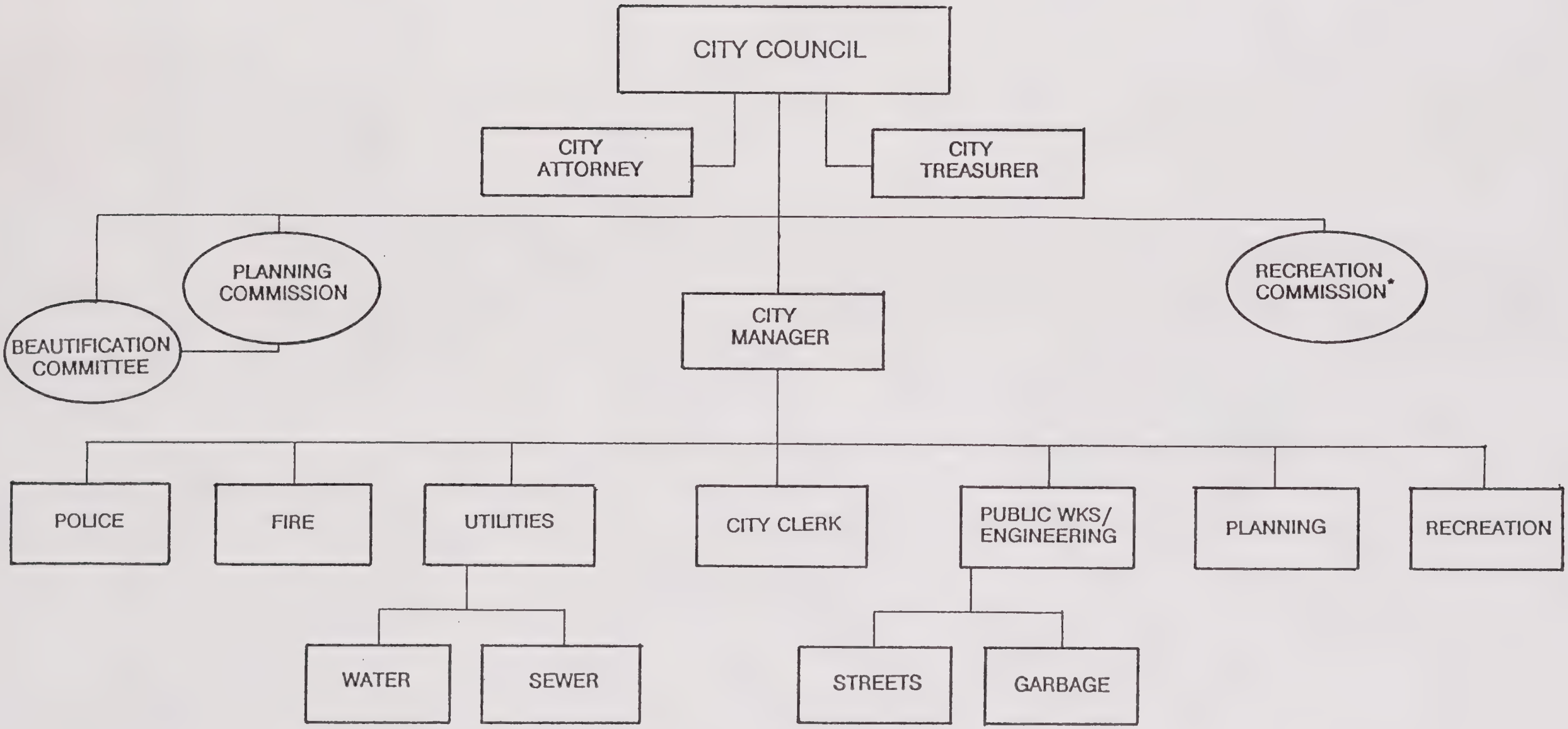
As of June 1990, the City had over 2,600 metered connections to its system. All customers are metered, including all residences. In 1990, the City's total annual water production was 427 million gallons (387 million gallons were delivered to metered customers, the rest was used for other purposes, such as flushing pipes and fire hydrant testing). This works out to an average production of 1.17 million gallons per day (mgd). Presently, the City operates its water system at about 50 percent of its capacity during peak months.

Fire flow requirements for Patterson recommended by the Insurance Services Bureau are:

Residential	1,000 gpm
Principal Business District	2,500 gpm
Industrial and other Business Districts	3,000 to 6,000 gpm

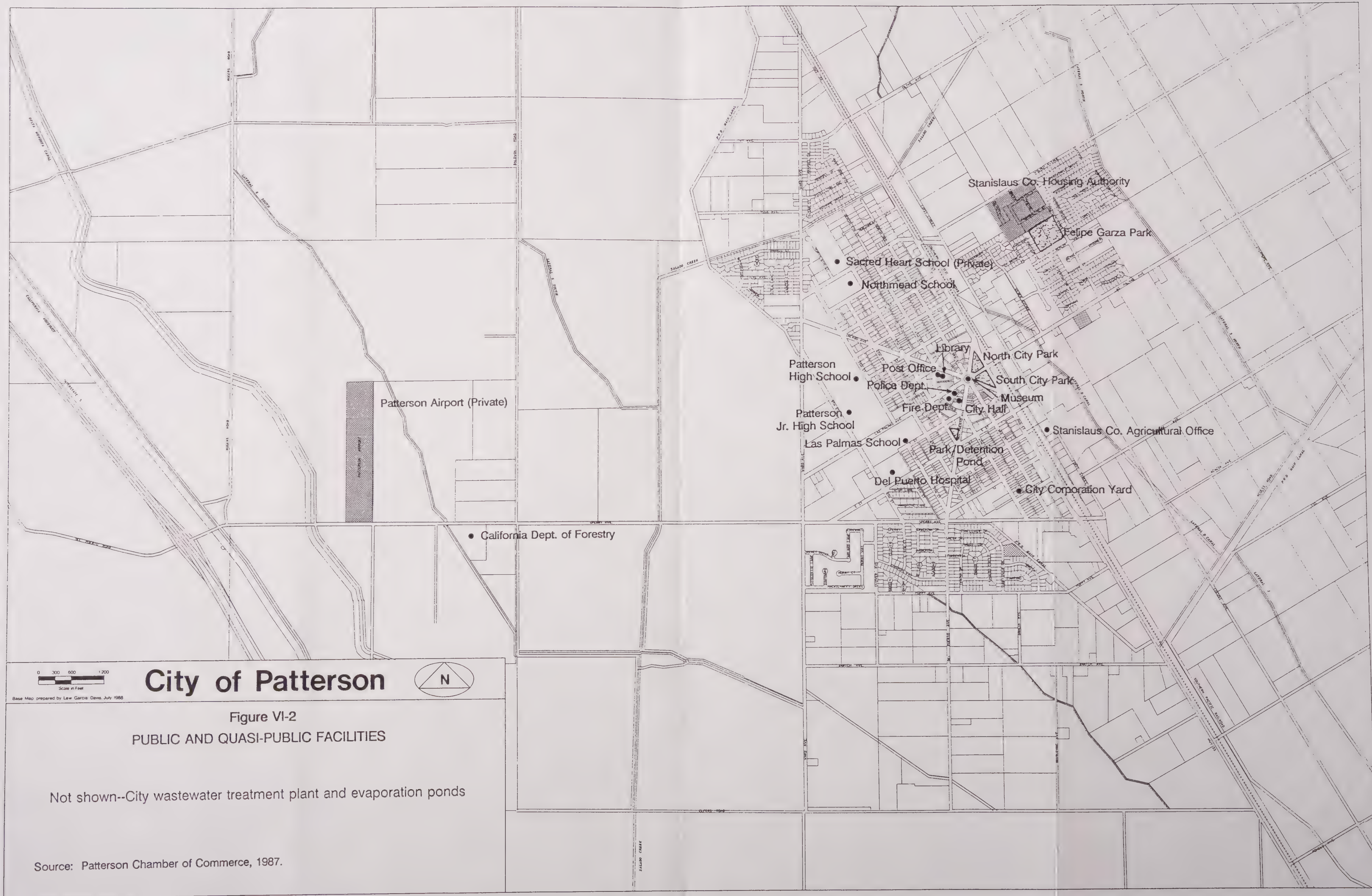
Figure VI-1

CITY ORGANIZATIONAL CHART



*Jointly appointed by City Council and Patterson Unified School District

Source: Patterson City Manager, 1988.



City of Patterson

Figure VI-2

PUBLIC AND QUASI-PUBLIC FACILITIES

Not shown--City wastewater treatment plant and evaporation ponds

Source: Patterson Chamber of Commerce, 1987.

City of Patterson

Figure VI-3

WATER SERVICE FACILITIES

Source: City of Patterson Water System Master Plan, 1984, and Infrastructure Base Maps.

In some areas, the water system is unable to provide the recommended fire flow due to undersized mains. The primary area is the older downtown area and surrounding residential and commercial areas. The City is interconnecting various portions of the water system to provide looping for the entire system and increase water pressure and volume in the areas surrounding downtown.

Irrigation Districts

Three irrigation districts serve the Study Area: the Patterson Water District; West Stanislaus Irrigation District; and the Del Puerto Water District. The boundaries of these districts are shown in Figure VI-4. The Patterson Water District currently provides water to irrigate approximately 13,500 acres that surround the city, primarily the lands to the east of Patterson and west of the San Joaquin River.

The Patterson Water District receives water from the Central Valley Project (CVP), the San Joaquin River, and maintains one groundwater pump. The district diverted approximately 41,600 acre-feet (af) of water in 1989. The district contracts with the U.S. Bureau of Reclamation for 22,500 acre feet per year (af/yr) of water from the CVP, and augments the remainder with water from the San Joaquin River and groundwater. Irrigation water from the CVP is conveyed by the Delta Mendota Canal, which is located west of the city. From there the water is conveyed to district lands by a series of main and lateral canals.

The West Stanislaus Irrigation District provides water for irrigation to the area north and west of the city. The district services about 25,000 acres, with water from the CVP and the San Joaquin River. The district provided 78,000 af of water in 1987. The district has a contract for 50,000 af/yr of CVP water and is licensed to pump 262 cfs of water per year from the San Joaquin River. Water is conveyed from the Delta-Mendota Canal by open canals and pipes. The district maintains 46 miles of concrete-lined canals, 16 miles of unlined canals, and 22 miles of sublateral concrete pipe.

The Del Puerto Water District provides irrigation water to approximately 3,100 acres west of the City of Patterson. The district contracts for 12,060 af/yr of CVP water conveyed by the Delta-Mendota Canal. The Del Puerto Water District has no distribution system of its own; all means of distribution are privately owned and maintained.

WASTEWATER COLLECTION, TREATMENT, AND DISPOSAL

The City provides wastewater collection, treatment, and disposal service for all residents, schools, commercial and industrial establishments within its jurisdictional boundaries except for Patterson Frozen Foods, which provides its own system. Residences in the unincorporated Study Area use septic tanks.

The existing collection system consists of gravity flow pipelines ranging in size from 6 inches to 18 inches in diameter and generally located within City street rights-of-way. The older portion of the system, which generally serves the downtown core residential and commercial area, was constructed before 1960. Newer developments have been connected to this system as they have occurred.

The free flow capacity of the 18-inch trunk pipeline extending along Walnut Avenue to the treatment facilities is 3.5 million gallons per day (MGD) throughout most of its 13,000 foot length. The last 2,000 feet of this pipeline is rated at 2.7 MGD. The primary sewer mains are depicted in Figure VI-5.

City treatment and disposal facilities consist of influent pumping, oxidation ditch activated sludge processing, disinfection, peak flow diversion and disposal ponding, and an outfall to the San Joaquin

River. The City is permitted a year-round secondary level discharge to the river, but in practice, all effluent is applied to land via the pond system. The ponds also receive system flows that exceed treatment plant hydraulic capacity.

The existing treatment capacity is 1.0 MGD on an average dry weather flow (ADWF) basis, and approximately 2.0 MGD on a peak wet weather flow (PWWF) basis. The annual average evaporation/percolation disposal capacity of the pond system is about 0.5 MGD, based on peak wet season conditions as occurred in 1982/83 and 1985/86. Disposal of effluent to land via the ponds has continued without overloading because of the dryer than normal wet seasons experienced in recent years.

Wastewater flows in 1990 averaged about 0.77 MGD from a population of approximately 8,800. The current per capita wastewater loading factors are therefore approximately 84 gallons per day, and 0.15 lbs BOD/day, which are reasonable for a community with a residential/commercial mix such as Patterson.

Peak system flows are estimated to slightly exceed 4.0 MGD, which is the accuracy limit of influent flow measuring equipment. A considerable volume of extraneous flow enters the wastewater system during wet weather periods, principally as inflow. While the pond system provides adequate holding capacity for peak flows, the collection system capacity limits the conveyance potential at present. The City administers an on-going system maintenance program, an objective of which is the identification and elimination of extraneous flow sources.

Patterson Frozen Foods owns and operates a separate conveyance treatment and disposal system for its industrial wastewater. Treatment is provided in aerated lagoons with disposal of effluent by spray irrigation on land located north of the Study Area.

STORM DRAINAGE

As of Fall 1990, the City's drainage system is composed of five detention basins and storm drain lines. Figure VI-6 shows the locations of existing lines and detention basins. In 1986, Lew-Garcia-Davis completed a *Storm Drain Study and Master Plan* to identify existing and future drainage problems and outline alternatives and their costs. The study concluded that there were not adequate gravity outfall facilities to directly convey the entire stormwater runoff from the City to the San Joaquin River, and that the costs of constructing such a system would be prohibitive. The study suggested controlling drainage in detention basins and then conveying it to the river via existing facilities, including Salado Creek (Black Gulch pipeline), the Patterson Water District overflow pipe, and an abandoned industrial sewer line.

The *Storm Drain Master Plan* divides an area which extends slightly beyond the city limits into 14 watershed areas. The *Master Plan*'s study area and watershed areas are shown in Figure VI-5. Storm drainage in the unincorporated areas of the Study Area has not been evaluated.

Localized Flooding Problems

Flooding in the Study Area is due primarily to Salado Creek. Salado Creek flows through an earth channel from the west until it reaches Highway 33, where the natural creek was filled in and replaced with a 36-inch pipe. During heavy storms, Salado Creek does not have adequate capacity to carry upstream storm water runoff through the city. A major drainage problem occurs when the creek overflows near Highway 33 and then flows through the Salado/Walnut watershed and causes flooding along Walnut

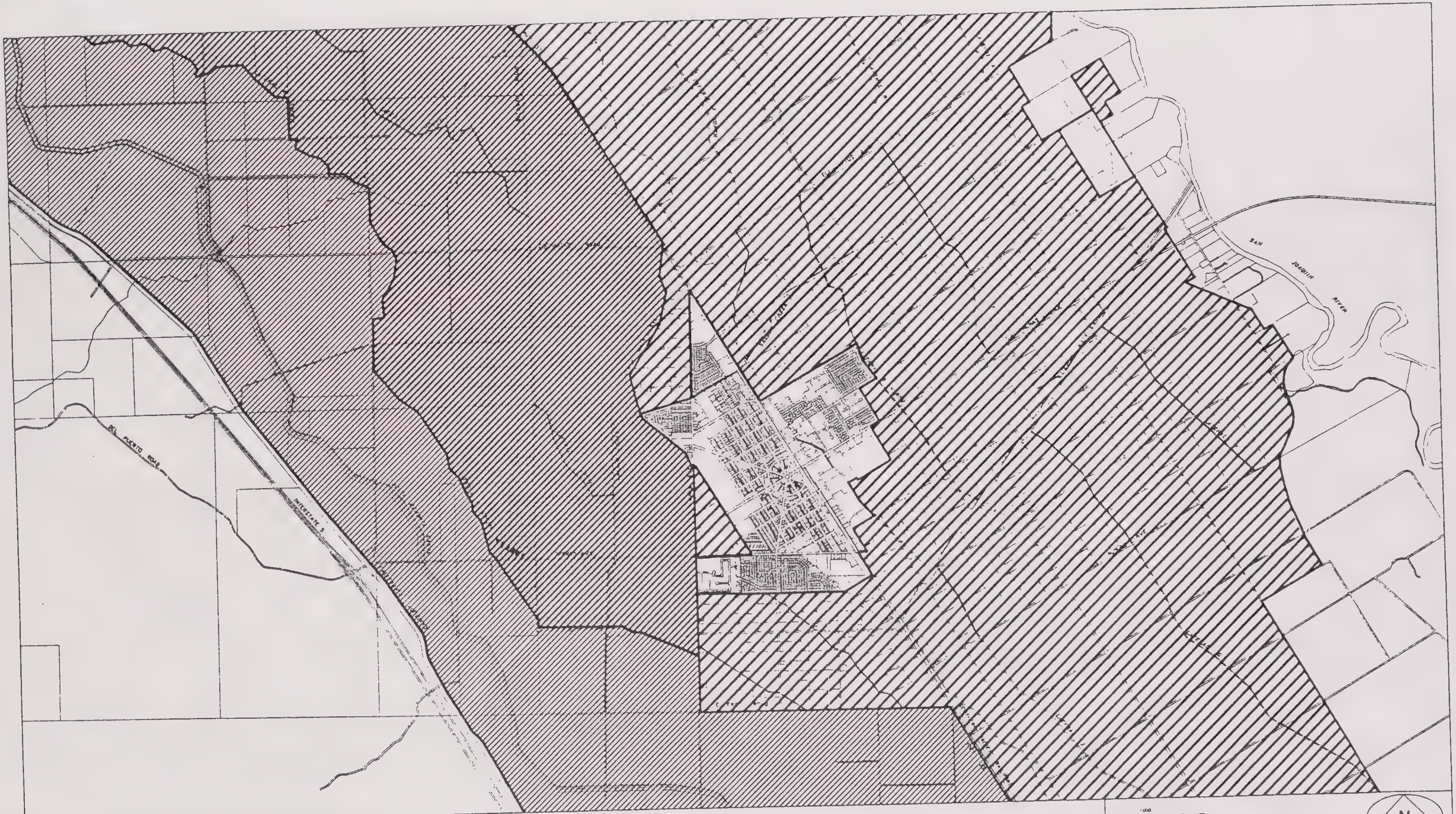


Figure VI-4
IRRIGATION DISTRICTS

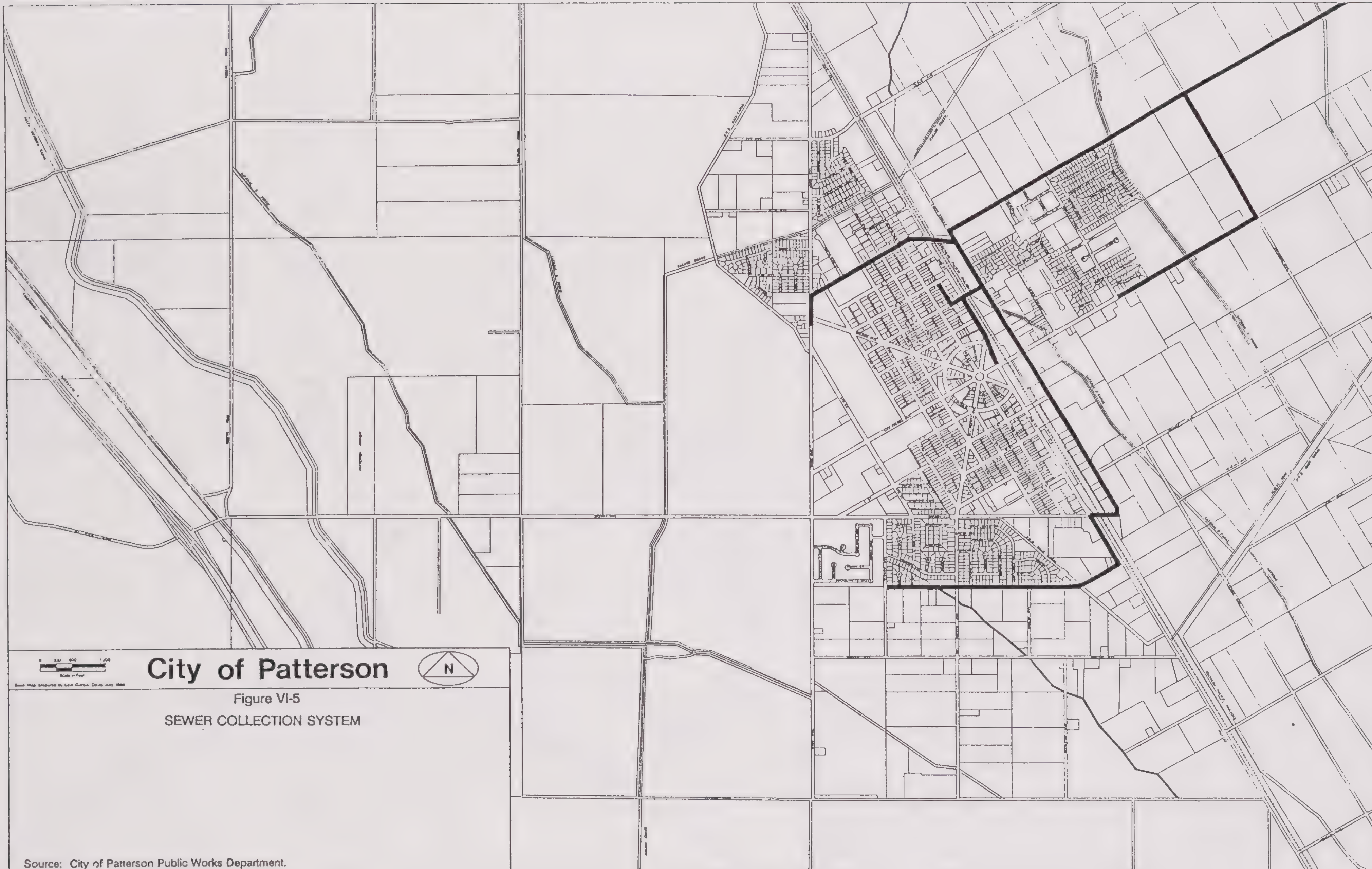
Del Puerto Water District

West Stanislaus Irrigation District

Patterson Water District

Sources: Patterson Water District, Del Puerto Water District, and West Stanislaus Irrigation District.

Patterson Planning Area



City of Patterson

Figure VI-5

SEWER COLLECTION SYSTEM

Source: City of Patterson Public Works Department.

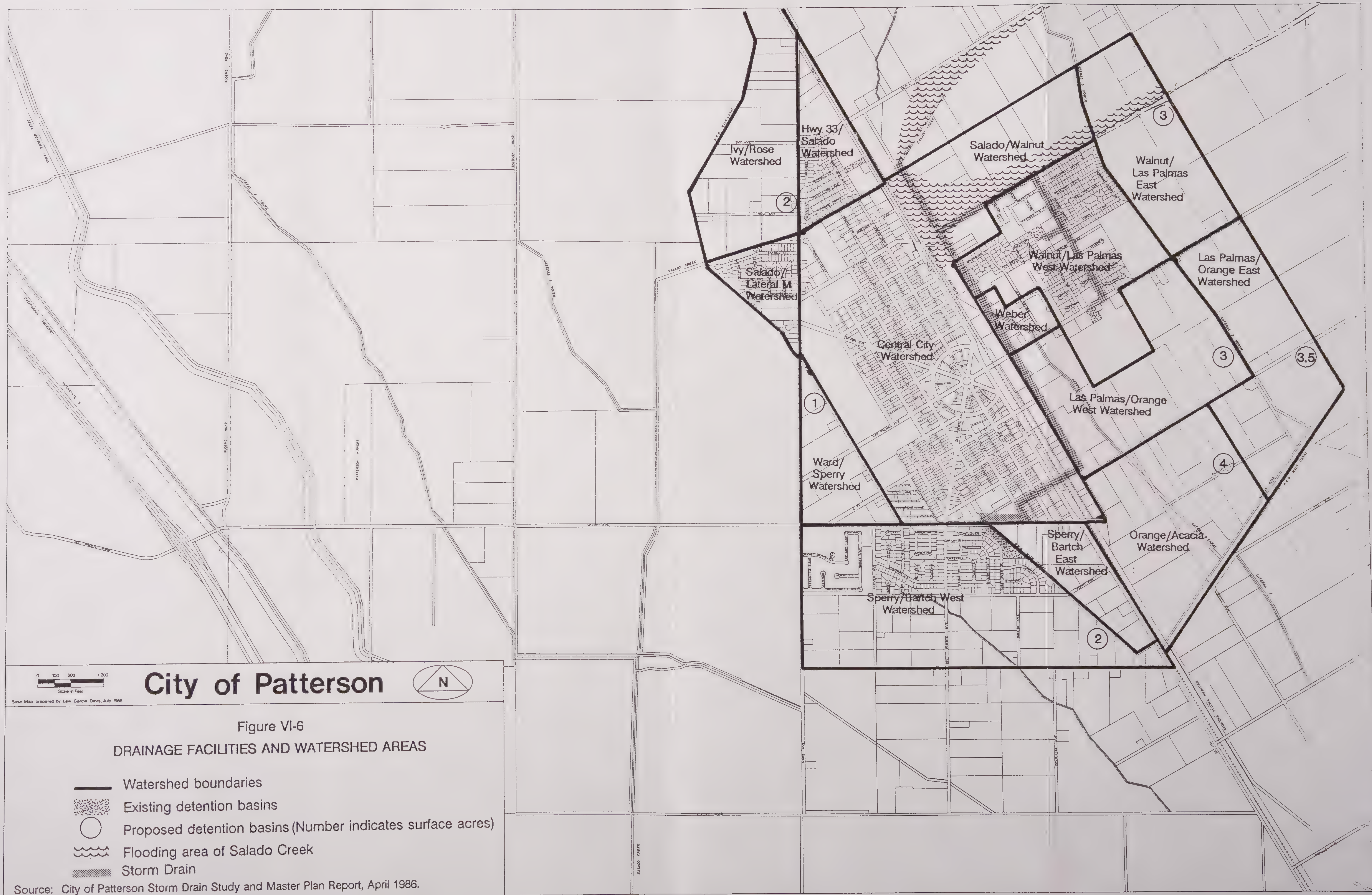


Figure VI-6

DRAINAGE FACILITIES AND WATERSHED AREAS

Avenue. In addition, two storm drains which drain into Salado Creek back up when the creek exceeds its capacity.

The *Master Plan* recommends that development in the area north of Walnut Avenue between First Street and Irrigation Lateral 3 North be prohibited until Salado Creek can be controlled. The City and County have committed funds for the U.S. Army Corps of Engineers to perform a feasibility study to identify solutions to Salado Creek flooding. The timeframe and financing for Salado Creek drainage improvements are undetermined at this time.

LAW ENFORCEMENT

The Patterson Police Department provides law enforcement within the city limits. The police department is located at 433 West Las Palmas Avenue. Dispatching of police units is done through the Stanislaus County Communications Center in Modesto.

The department employed 17 sworn officers as of March 1991. This works out to a ratio of 1.9 officers per 1,000 population. The department employs one part-time animal control officer.

The police department operates one patrol beat for the entire city; the number of patrol cars ranges from one to four units, typically two patrol cars and one patrol supervisor. The average staffing is one officer per patrol unit. Response times for the police department are categorized according to the severity of the reported offense or complaint. The department's response time for priority 1 calls, constituting a major crime or incident in-progress requiring immediate dispatch, is typically less than three minutes. A summary of reported offenses and incidents reported by the Patterson Police Department from 1985 to 1990 is listed in Table VI-2.

Law enforcement in the unincorporated area is the responsibility of the Stanislaus County Sheriff's Department. Coroner's service is provided throughout the county by the Sheriff's Department.

The California Highway Patrol patrols the state highways and interstates and county roads that pass through the Study Area.

TABLE VI-2

PATTERSON POLICE DEPARTMENT
SUMMARY OF INCIDENTS AND OFFENSES REPORTED
1985 to 1990

	1990	1989	1988	1987	1986	1985
Part I Crimes						
Murder	0	1	0	0	0	0
Rape	7	0	2	1	1	0
Robbery	3	2	6	3	4	2
Assault	146	144	104	88	70	46
Burglary	65	85	105	106	111	126
Theft	202	233	203	193	211	176
Motor Vehicle Theft	20	26	12	14	12	12
Total Part I Crimes	**443**	**490**	**433**	**405**	**409**	**362**
Other Crimes						
Arson	0	2	4	1	2	3
Traffic Accidents	122	118	146	155	122	94
Traffic Citations	1,796	1,427	1,182	1,174	677	758
Driving Under Influence	200	152	99	136	101	29
Check Investigations	127	215	80	75	66	65
Narcotic Investigations	53	66	46	59	67	15
Assist Other Agencies	260	420	398	353	419	362
Abandoned Vehicles	182	376	340	223	76	29
Disturbing the Peace	339	443	444	457	354	307
Warrants Served	182	149	93	99	98	68
Total Arrests						
Adult	1,375	1,116	705	724	467	256
Juvenile	213	243	173	161	122	37
Total Reports	6,010	5,758	5,384	4,905	4,092	3,546
Stolen Property	$118,378	$245,089	$213,089	$239,067	$136,172	$151,864
Recovered Property	$ 40,975	$ 57,284	$ 69,750	$ 25,336	$ 51,528	$ 44,357

Source: Patterson Police Department, 1991

FIRE PROTECTION

Fire protection within the Study Area is provided by the Patterson Fire Department and the West Stanislaus Fire District (WSFD). The Patterson Fire Department and WSFD are volunteer fire departments which share a full-time fire chief and a fire station in Patterson. For administrative purposes, however, they operate as separate entities. The Patterson Fire Department provides fire protection to all lands within the city limits. The WSFD boundaries include an area of approximately 625 square miles, including all unincorporated lands within the Study Area.

The fire chief serves as chief of both the Patterson Fire Department and the WSFD, with half of his salary paid by each entity. In 1990, the Patterson Fire Department was staffed by 40 volunteers who, along with 85 other volunteers, served the WSFD. Volunteers are called from the area where the call origintes.

The fire station is located at 433 West Las Palmas Avenue. This facility does not have adequate space for administration, equipment and equipment maintenance, and storage, or adequate parking. The WSFD operates out of four additional stations--in Westley, Crows Landing, Newman, and El Solyo.

The WSFD has mutual aid agreements with all adjoining fire districts, including the Woodland Avenue Fire District, the Salida Fire District, the Westport Fire District, the Mountain View Fire District, and the Crows Landing Naval Base. The California Department of Forestry operates a fire station on Sperry Road east of Interstate 5 to combat fires during the summer fire season.

The fire department's equipment includes three engines and one rescue vehicle (owned jointly by the City and the WSFD) Equipment owned by the WSFD includes nine engines (two reserves), five water tankers, three rescue vehicles (one reserve, one each owned jointly with the Cities of Patterson and Newman), one mobile air compressor, a large mobile generator, and a pickup truck.

The fire department's average response time varies, depending on the area. Response times in most areas within the city are typically about three to six minutes. In the WSFD's service boundaries, response times can vary greatly, up to one hour to the more isolated areas.

Public protection classifications are designated by the Insurance Services Office (ISO). The ISO considers three primary factors in their rating system: fire department location, personnel, and equipment (50 percent), water supply and fire flow capacity (40 percent); and communications capabilities (10 percent). Ratings are based on a scale of 1 to 10, with 1 being the best possible protection. The Patterson Fire Department maintains an ISO rating of 6 within the city. Outside the city, the ISO rating is 9 overall, with an 8 for dwelling units.

In addition to fire suppression, the fire department's services include: fire prevention, public education, fire hydrant maintenance, hazardous materials response, and nuisance abatement.

SCHOOLS

Patterson Unified School District

School service within the Study Area is provided by the Patterson Unified School District. The District boundaries include an area larger than the Study Area; its northern boundary is San Joaquin County, its eastern border is the San Joaquin River, its southern border is Marshall Road, and its western border is Alameda County.

PUSD operates five elementary schools, one junior high, and one high school. The high school, junior high, and two of the district's elementary schools are located in Patterson. The other three elementary schools are located in Westley, the San Antonio Valley, and in Vernalis. Addresses of the schools within the district and their respective grades are given below. The locations of schools located within the Study Area are shown in Figure VI-1.

Las Palmas School (Grades 4-6)
624 West Las Palmas Avenue
Patterson

Northmead School (Grades K-3)
625 L Street
Patterson

Grayson School (Grades K-6)
Howard Road
Westley

Harney School (Grades K-8)
San Antonio Road
Livermore

Rising Sun School (Grades K-5)
Welty Road
Vernalis

Patterson Junior High School (Grades 7-8)
201 North 9th Street
Patterson

Patterson High School (Grades 9-12)
200 North 7th Street
Patterson

The PUSD also has five pre-school classes; two are offered at Northmead School, two at Grayson School, and one at the Stanislaus County Housing Authority facility on Walnut Avenue.

In the 1989/90 school year, the student-teacher ratio within the PUSD was 26.8 to 1 for K-6, 26.9 for grades 7-9, and 27.4 to 1 for grades 10-12.

The PUSD has a loading policy of 25 students per K-6 classroom and 30 students per 7-12 classroom. The state policy is 29 students in K-3 classrooms, 33 students in 4-6 classrooms, 30 students in 7-8 academic classrooms, 26 students in 7-8 laboratory classrooms, 28 students in 9-12 academic classrooms, and 24 in K-12 laboratory classrooms. Enrollment in each school and the schools' capacity based on the district's and state's formula are presented in Table VI-4.

TABLE VI-4

PATTERSON UNIFIED SCHOOL DISTRICT
SCHOOL ENROLLMENT AND CAPACITY

School	Enrollment (1989/90)	State Capacity	District Capacity
Grayson School (Westley)	298	335	275
Harney School (San Antonio Valley)	18	30	25
Las Palmas School	551	561	425
Northmead School	943	650	574
Rising Sun School (Vernalis)	50	120	100
Patterson Junior High School	492	1,210*	1,314*
Patterson High School	662		
Total	**3,014**	**2,906**	**2,713**

*Junior high school and high school capacities combined

Source: Patterson Unified School District, 1990

The PUSD faces special needs for bilingual and bicultural education because its student body is approximately 70 percent Hispanic. Grayson School, which is nearly 100 percent Hispanic, experiences a surge in school population each May when children of seasonal migrant workers which are housed in migrant housing units in Patterson and Westley enroll at the school. Enrollment at Grayson School grew from 278 during the last week of April to 314 in June 1990.

The PUSD operates a summer program for children of migrant workers to help them catch up on needed course work. The PUSD assesses new facility development fees on new development at a rate of $1.58 per square foot of residential development and $.26 per square foot of new commercial and industrial development since June 1990.

The Grayson School reconstruction project was completed in 1989. PUSD has applied for funds to modernize Las Palmas School, but the project does not have high priority according to the State Allocation Board. Funding for this project is not expected in the near future.

The District has met with various groups to discuss funding and construction procedures for a new school. School officials estimate that the PUSD will need to begin building a new school in three to four years, although other alternatives are being explored, including year-round schools and double sessions. Options for erecting a permanent structure, a completely modular school, or a combination are being studied. The PUSD Board of Trustees has authorized staff to meet with developers to explore ways of mitigating the effects of growth on PUSD schools.

Sacred Heart School is a parochial school in Patterson which serves grades K-6. Sacred Heart School is located at 505 M Street, and had a total enrollment of 85 students as of 1990.

Colleges and Universities

Patterson is served by the Yosemite Community College District. The nearest community college is Modesto Junior College in Modesto, which has two campuses. Modesto Junior College West is located on Blue Gum Avenue and the main campus is located on College Avenue. The colleges in the district offer a full program of courses suitable for transfer to a four-year college or university, and offer an Associate of Arts degree.

California State University, Stanislaus, is located in Turlock, approximately 18 miles from Patterson. CSUS offers a variety of four year bachelor of arts and science degrees, and a limited number of masters of arts degrees. Chapman College in Modesto, a private college, also offers bachelors and masters degrees. A number of business and vocational schools are also located in Modesto.

Special Education Services

The John F. Kennedy Special Education Center in Modesto provides a complete range of classes for the trainable mentally retarded, developmentally handicapped, and multi-handicapped students, from 0 to 22 years. The center also provides vocational training and parent counseling.

MEDICAL SERVICES

Del Puerto Hospital is located at 9th and "E" Streets in Patterson. The hospital is operated by the Del Puerto Hospital District formed in 1947 for the purpose of developing Del Puerto Hospital. The district's boundaries encompass an area larger than the Study Area, including the communities of Patterson, Westley, Crows Landing, Vernalis, and Grayson. The district is managed by a five-member board of directors, elected at-large for four year terms.

Del Puerto Hospital is an acute care facility which began operations in 1950. Its facilities include general medical and surgical care and emergency and paramedic services. As of July 1990, the hospital had 43 licensed beds, including 6 perinatal, and 19 medical/surgical. Eighteen chemical dependency beds were being converted to 17 skilled nursing beds with the opening scheduled for April 1991.

In 1985, the hospital adopted a *20-Year Development Plan for Del Puerto Hospital* to plan for growth and expansion. The *Master Plan*'s estimated number of beds needed through 2005 is summarized in Table VI-5.

The *Master Plan* assumes that by 1995 the hospital will expand to include an intensive care unit, a skilled nursing unit, after-hours health service, and will establish or co-sponsor a Home Health Service. The hospital's emergency service is staffed continuously by an in-house physician.

According to the *Master Plan*, 44.7 percent of Patterson residents who visited a Stanislaus County hospital in 1984 used Del Puerto Hospital. The Hospital Administrator attributes this partly to the absence of an obstetrician in Patterson, and concludes that the percentage would increase if an obstetrician were to locate in the area.

TABLE VI-5

DEL PUERTO HOSPITAL
ESTIMATED NUMBER OF BEDS NEEDED
1985 - 2005

	1985	1990	1995	2000	2005
Hospital Market Area Population[1]	11,646	17,524	22,526	29,740	40,226
Bed Need					
Medical/Surgical/Pediatric	19	16	21	27	37
Chemical Dependency	7	11	14	18	25
Perinatal	2	3	4	5	7
Intensive Care	N/A	3	4	5	6
Skilled Nursing	N/A	36	46	61	83
Total Bed Need	**28**	**69**	**88**	**117**	**158**

[1] Total market area includes Patterson, Crows Landing, Vernalis, Westley, Grayson, and Other. Population projections for Patterson area: 1985 - 5,020; 1990 - 8,138; 1995 - 12,907; 2000 - 20,021; 2005 - 24,871.

Source: *20-Year Development Plan for Del Puerto Hospital: 1985-2005*, Prepared by Cattaneo & Stroud, Inc., Burlingame, CA, 1986.

The hospital owns a vacant parcel adjacent to the hospital. The hospital board of directors is negotiating to lease a portion of the land to private developers on a preferred basis to develop specialty care and medical office facilities. The intention is that the doctors in this complex would use hospital services for their patients, thus increasing hospital use. Development of medical offices would require rezoning of the parcel. The issue was approved by public ballot initiative in November 1990.

As growth continues and demand for hospital services in the Patterson area increases, there will be a need for hospital expansion and possible relocation. As of January 1991, the district is not seeking new land to site a new facility.

There is currently a shortage in nursing home space countywide. The only nursing home facility in western Stanislaus County is a 95-bed facility in Newman. A feasibility study performed for the hospital district indicated that Patterson would be able to support a nursing home. A skilled nursing facility is planned for an unused patient wing in the short range plan to fill this need. The hospital's finances are projected to improve, whereupon construction of a 55-bed facility with additional skilled nursing beds may be constructed on part of the vacant parcel adjacent to the hospital. A nursing home is permitted under the parcel's present zoning.

The Patterson Ambulance Company operates two ambulances out of Del Puerto Hospital. Five full-time paramedics and a number of volunteer ambulance workers provide service to the entire Study Area and beyond.

Patterson Medical Clinic is located at 44 North Third Street. The clinic provides low cost medical care and mental health counseling.

SOLID WASTE DISPOSAL

The City of Patterson provides mandatory solid waste collection to all residents and businesses in the city. The City provides pick up twice weekly. In 1990, the City collected a total of about 5,625 tons.

The City owns four garbage trucks, and has reserved one as standby. With increase demands, however, the City may need to purchase an additional truck in order to reserve one for standby because garbage trucks require substantial maintenance.

The City transports the refuse to the Fink Road waste-to-energy facility, located west of Crows Landing. The facility recycles and burns refuse, and provides electricity to Pacific Gas & Electric's system.

The City sponsors an annual Spring cleanup as a way for residents to clear weeds, brush, debris, and junk from their homes and property. Residents pile the debris at the curb and city crews pick it up at no charge.

In the unincorporated Study Area, garbage is collected by private franchises under contract to the County.

LIBRARY

Library service is provided within the Study Area by the Stanislaus County Public Library system. The Patterson branch is located at 46 North Salado Avenue. The Patterson library, with a staff of one full-time librarian and 14 hours a week of part-time page service, offers a collection of 22,238 volumes and provides reference and information assistance for patrons.

The library facility occupies 5,816 square feet. According to the librarian, the library presently has adequate space to accommodate patrons and has no expansion plans.

MUSEUM

The museum is located at the Plaza building in the center of the Plaza circle. The Plaza building was the town's first building and served as the Patterson Ranch Company office. The museum is operated by Patterson Township Historical Society. Hours are Monday, Wednesday, and Friday from 9 a.m. to 11 a.m. Special tours may be arranged.

GAS AND ELECTRICITY SERVICE

Natural gas and electricity service are provided by Pacific Gas and Electric Company. This privately-owned utility company operates throughout Central and Northern California under authority from the California Public Utilities Commission.

Existing electrical transmission lines supplying the Patterson area consist of 115 kilovolt (kv) source lines.

TELEPHONE SERVICE

Evans Telephone Company provides telephone service to Patterson. In July 1988, Evans Telephone installed a new switching system as part of its expansion program for Patterson. The former switching station could serve a maximum of 3,500 access lines.

FINDINGS

- The City's water supply is provided by five city wells. The City is presently operating at about 50 percent of its capacity during peak months.

- As growth occurs and the city expands, agricultural lands in the surrounding water districts will be lost to urbanization. Concomitantly, demand for irrigation water would be reduced while the demand for domestic water would be increased. If the City's domestic supplies become inadequate, it may be necessary to investigate modifying federal contracts with the appropriate water districts to include municipal and industrial water supplies.

- In 1990, the city's wastewater flows averaged 0.77 million gallons per day (MGD). The treatment plant has a capacity of 1.0 MGD average daily flows and 2.0 MGD peak wet weather flows. The city's peak wet weather flows exceed 4.0 MGD as a result of extraneous flows in the system.

- The City evaporates its treated sewage in ponds rather than discharging the treated effluent to the San Joaquin River, although it has a permit to do so. The treated effluent could potentially be used for irrigation purposes in the future.

- The City's storm drainage system relies on detention basins and storm drains. Localized flooding problems occur east of Highway 33 and north of Walnut Avenue during heavy storms when Salado Creek backs up.

- The Patterson Police Department employs 17 sworn officers as of March 1991. Response times for priority 1 calls are typically less than three minutes.

- The Patterson Fire Department is a volunteer fire department. Patterson maintains an insurance rating of 6 within the city, areas outside the city have ratings of 8 or 9.

- The Patterson Unified School District operates four schools within the city: two elementary, one junior high, and one high school. Although these schools are not presently impacted, future growth will require facility expansion or the development of new school sites within the next few years.

- Del Puerto Hospital served about 45 percent of Patterson residents using Stanislaus County hospitals in 1985. Expansion plans of the hospital include and intensive care unit, a nursing home, and a Home Health Service.

- The City provides solid waste collection and disposal services to all residents twice weekly. The City transports its waste to the County's Fink Road waste-to-energy facility.

BIBLIOGRAPHY

City of Patterson, *General Plan*, 1978.

City of Patterson, *Sanitary Sewer Collection Study and Master Plan*, Prepared by Lew-Garcia-Davis, Ceres, CA, May 1985.

City of Patterson, *Storm Drain Study and Master Plan Report*, Prepared by Lew-Garcia-Davis, Ceres, CA, April 1986.

City of Patterson, *Water System Master Plan*, Prepared by Lew-Garcia-Davis, Ceres, CA, October 1984.

Del Puerto Hospital District, *Twenty-Year Development Plan for Del Puerto Hospital: 1985-2005*, Prepared by Cattaneo & Stroud, Inc., Burlingame, CA, 1986.

Patterson Unified School District, *Demographic/Facility Study*, prepared by Jack Shreder & Associates, August 1990.

Stanislaus County Economic Development Corporation, *Patterson Community Assessment*, May 1987.

Stanislaus County, *General Plan Support Documents*, 1987.

PERSONS CONSULTED

Avery, Thomas, Hospital Administrator, Del Puerto Hospital

Daniel, Keith, Ed.D., Superintendent, Patterson Unified School District

Gaiser, Dick, Fire Chief, Patterson Fire Department and West Stanislaus Fire District

Hansen, Helen, Business Manager, Patterson Unified School District

Lo, Jerry, City Engineer, City of Patterson

Lopez, Ignacio, Utilities Director, City of Patterson

Middleton, William, Police Chief, Patterson Police Department

Nachbar, John, City Manager, City of Patterson

Popkes, Sandy, Librarian, Stanislaus County Library - Patterson Branch

Simpson, Rod R., City Planner, City of Patterson

Spencer, Tyrone, Lieutenant, Patterson Police Department

GLOSSARY

af - acre-feet

cfs - cubic feet per second

gpad - gallons per acre per day

gpcd - gallons per capita per day

gpd - gallons per day

gpm - gallons per minute

Infiltration/Inflow (I/I) - Infiltration is extraneous water that leaks into sewer lines from surrounding saturated ground through various means. Inflow is water that is channeled into the sewage collection system by storm water collection systems such as roof leaders, foundation drains, and storm sewers.

Insurance Services Office (ISO) - An agency which evaluates fire protection features for all fire departments for purposes of establishing rates for underwriters.

MGD - million gallons per day

PUSD - Patterson Unified School District

psi -pounds per square inch

Response time - The amount of time it takes police or fire units to arrive at the scene of a reported incident.

USBR - U.S. Bureau of Reclamation

WSFD - West Stanislaus Fire District

CHAPTER VII

RECREATIONAL AND CULTURAL RESOURCES

CHAPTER VII

RECREATIONAL AND CULTURAL RESOURCES

INTRODUCTION

The City of Patterson has a variety of recreational, cultural, and archaeological resources. These resources take several forms ranging from the contemporary city and its open space resource through the rich historic settlement and development periods, to the ethnography and archaeological resources of the native American period.

Although no original research and fieldwork was conducted in the development of this chapter, numerous published sources and many public agencies and individuals involved in cultural, historical, and archaeological resources in the Patterson area were consulted in preparing this chapter.

PARKS AND RECREATION

Parks

Parks in Patterson are operated and maintained by the City. The City presently has about eight acres of parkland, excluding school property and facilities. Patterson's parks and their facilities are listed below and their locations are shown in Figure VII-1.

- North and South City Parks at Las Palmas and Highway 33 make up a combined three acres. These are the oldest parks in Patterson, established when the town was originally laid out. The parks have playground equipment, and are heavily used on holidays and weekends.

- Felipe Garza Park is a five-acre park at Walnut and Las Palmas Avenues. Facilities at the park include playground equipment, a baseball diamond, and an open grassy area.

The City is also considering the conversion of a detention basin in the southern part of city to the proposed Sunflower Park.

In addition to these public park facilities, the city relies heavily on school grounds and equipment for parks and recreational uses. School grounds are open to the public after school and during the summer.

- Northmead School takes up seven acres at M Street and Fifth Street. Facilities include playground equipment and large open grassy areas.

- Las Palmas School is an 11-acre site at Ninth Street and Las Palmas Avenue. School grounds contain large open grassy areas.

- Patterson High School and Junior High School share a 37-acre site. Facilities include athletic fields, tennis courts, and a gymnasium. Little League baseball games are held at the high school.

Excluding school property, Patterson has a ratio of 0.8 acres of developed parkland to 1,000 population. This is substantially deficient. Under the Quimby Act (California Government Code 66477 et seq.), local governments may require dedication of 3.0 acres per 1,000 population unless the existing park area exceeds that limit, in which case local governments may require up to the existing standard, not to exceed 5.0 acres per 1,000 population.

The City has been collecting park in-lieu fees on new development to purchase and develop a large community park of 40 to 50 acres. The location of the park site and park development are projected to be part of the General Plan project.

Recreation

The City's Recreation Department offers a number of recreational classes and activities. Fees are charged for classes and activities in an attempt to cover costs. Activities include:

Adult Classes

- Aerobics
- Karate
- Open Gym
- Tennis
- Co-ed Body Conditioning
- Tennis Club
- C.P.R.
- First Aid
- Golf
- Square Dancing

Adult Leagues

- Bowling
- Volleyball
- Softball
- Mushball
- Basketball
- Horseshoes

Senior Citizens

- Bus Trips

Youth Classes

- Gymnastics
- Aerobics
- Karate
- Open Gym
- Baseball Camp
- Swimming (Lessons Only)
- Tennis
- Co-ed Body Conditioning
- Youth Wrestling
- C.P.R.
- First Aid
- Golf
- Judo

Youth Leagues

- Basketball
- Football
- Volleyball
- Baseball
- Softball

CULTURAL EVENTS

Apricot Fiesta

The largest cultural event in Patterson in the annual Apricot Fiesta. The first Apricot Fiesta was held in 1971, when the city proclaimed itself the "Apricot Capital of the World". The following year the event was incorporated as the Patterson Apricot Fiesta, Inc. The Fiesta is governed by a board of directors, six of whom are elected at large.

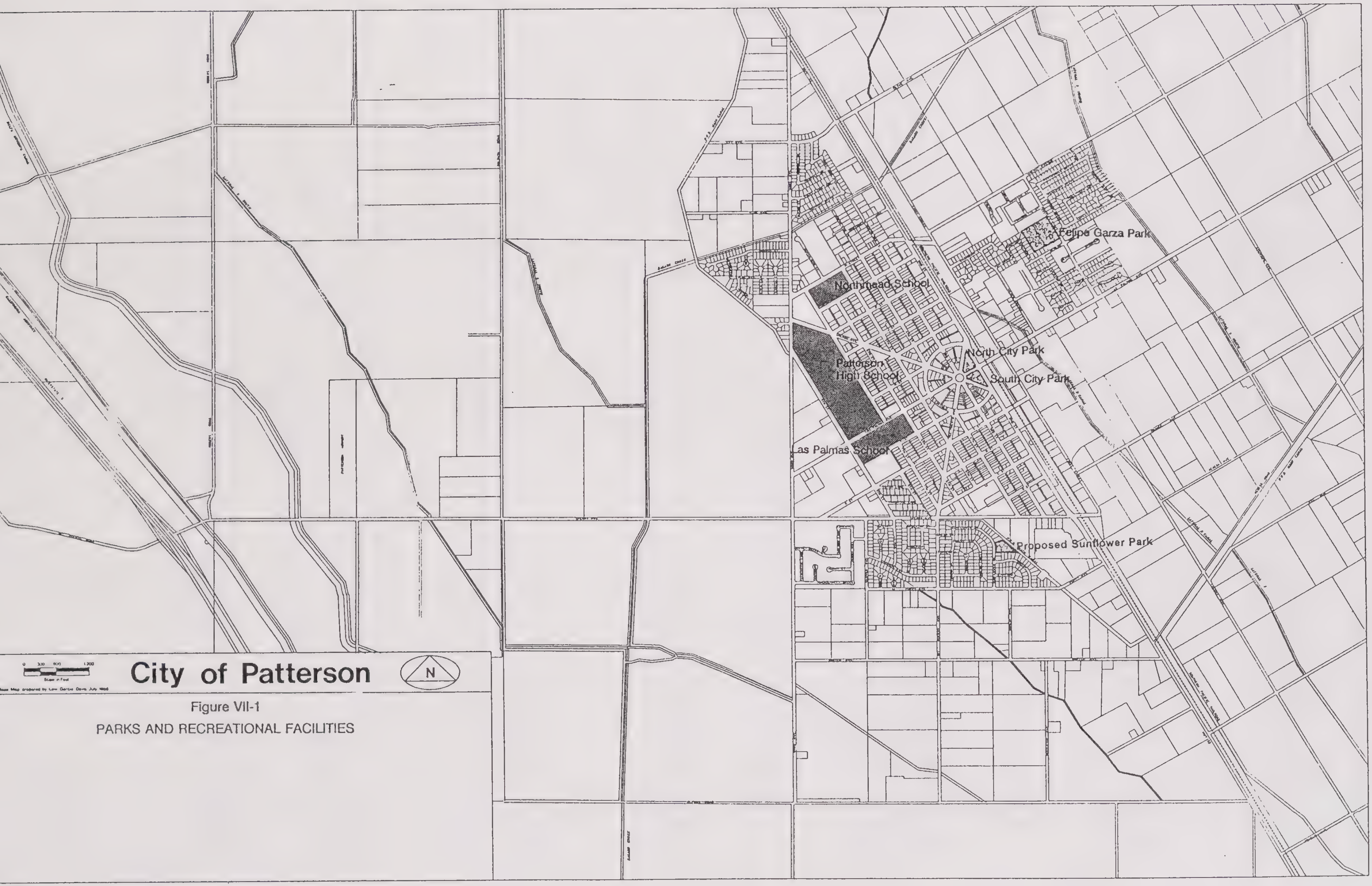


Figure VII-1

PARKS AND RECREATIONAL FACILITIES

In 1990, Patterson held its 20th Apricot Fiesta. The main events include the crowning of "Miss Apricot" and "Little Miss and Mr. Apricot," a parade with motorized floats, the Lions Club barbecue, and a fireworks show. There are also a variety of entertainment and activities, including arts and crafts, food booths, historical drama, skydiving, and other events.

Picnic in the Park

The Patterson-Westley Chamber of Commerce sponsors a "Picnic in the Park" during the fall. The purpose of the event is to give Patterson residents an opportunity to meet each other.

HISTORICAL AND ARCHAEOLOGICAL RESOURCES

Native Americans

The earliest known inhabitants of the Planning Area were members of the Yokut Tribe, whose earliest presence is estimated by archaeologists to have occurred at least 1,000 years ago. The Yokut's boundaries extended from the Tehachapi Mountains to present day Stockton. The Yokuts were probably attracted by the San Joaquin and Stanislaus Rivers and their tributaries. Most groups located their villages along the edges of permanent streams or watercourses. Yokut settlements tended to be larger and more permanent than in many parts of California.

The Yokut's subsistence in the area was based on gathering and processing of wild seeds, acorns, and other plants, fish and shellfish, and small game. They gained much of their livelihood from fishing, building tule boats to navigate the San Joaquin River and the Delta.

The Yokuts maintained trade links with coastal villages where they traded furs and other materials for shells, such as abalone and clams. Shell disks and dentelium beads, as well as polished cylindrically-shaped magnesite rocks and bi-valves, were used as money.

Spanish-Americans

The first Europeans to arrive in the area, in 1769, were deserters from the Spanish military. In 1813, Spanish Franciscan friars, accompanied by soldiers, entered the San Joaquin Valley to round up the deserters, convert the native Americans to Catholicism, and search for suitable mission sites. Although the Yokuts at first co-existed with the Spanish, they were eventually exploited by the newcomers and fought with the settlers.

Two of the most notable conflicts took place on the banks of the Stanislaus River about a mile and a half upstream from its confluence with the San Joaquin RIver. In the first battle on May 5, 1829, the combined Spanish forces from San Jose and San Francisco were defeated by the Yokuts, led by Chief "Estanislao." The Spanish later named the Stanislaus River after the indian chief. General Vallejo returned to the area and on May 19, 1829, defeated the Yokuts, inflicting great losses.

In 1832, Colonel Warner, a member of a trapping expedition, reported finding numerous indian villages along the San Joaquin River. Upon his return, however, he found the villages greatly depopulated due to a smallpox epidemic which took place in 1833.

Rancho Del Puerto

In 1824, Mexico won the Californias from the Spanish. A Mexican land grant for the Rancho Del Puerto was granted to Mariano and Pablo Hernandez in 1844. The original Mexican land grant was for land stretching east of present day Highway 33 to the San Joaquin River. The northern boundary was Del Puerto Creek, and the southern boundary was just south of present day Marshall Road. The Hernandez's built a house and corrals on the ranch. From 1844 to 1847, Indian raids in the area were common, as Indians that were freed from the missions returned to the area, especially along the banks of the San Joaquin River.

During the early 1840s to the 1860s, thousands of wild horses roamed the plains of western Stanislaus County and immense herds of deer, elk, and antelope were seen. Grizzly bears were common, and wild geese and ducks frequented the area each fall. The eventual shift to heavy agricultural use and alteration of the area for cultivation pressured both the wildlife and the remaining Indian population out of the valley.

In 1846, the United States acquired California from Mexico. Soon after, the Gold Rush of 1849 brought many changes. One of the most profitable occupations became cattle raising. The stockmen settled along the river and ran their cattle over the vast plains. The pioneers turned to merchandising, and the town's of Hill's Ferry, Crows Landing, Grayson, and San Joaquin City were born. During periods of high water, freight was shipped by steamboat and barges. During the rest of the year, freight had to be hauled by teams over the road along the river.

A claim and patent for the Rancho Del Puerto were granted to Samuel G. Reed and Reuben S. Wade on May 22, 1855. The land grant is one of a very few that had ever been signed by President Abraham Lincoln. Lincoln signed the grant himself because Lincoln had given his clerk the day off. The land was sold to J.O. Eldredge in 1866 for $5,000, and two months later to John D. Patterson for $5,400.

The building of the railroad in 1888 marked the abandonment of the river towns. Hill's Ferry moved to Newman, Crow's Landing to its present location, Grayson to Westley, and San Joaquin City to Vernalis. At the time, the Rancho Del Puerto was still John D. Patterson's ranch. He purchased additional land and raised wheat, cattle, purebred sheep, and draft horses on the land. Patterson farmed about 3,000 acres. Wheat was the major crop on the West Side. Stanislaus County was known as the banner wheat county of the state. The farmers had to depend entirely on the rainfall for their crops, however. When the rains failed to come, there was great hardship.

In 1877, the West Side Irrigation District was created. The district planned a project to irrigate the whole West Side from Tulare Lake to Antioch by a canal 100 miles long. However, the law creating the district was declared unconstitutional. A number of irrigation projects were formed, including the Miller & Lux Canal on the south extending from Mendota north to Crows Landing.

The Patterson Town and Colony

John D. Patterson died in 1902. He had no children and left his property to 13 heirs, mainly nieces and nephews. In order to settle the estate, the executors endeavored to sell the property but were unable to do so for more than $30 an acre, so decided it should be developed. Two of the heirs, Thomas W. Patterson and John Patterson, bought out the others and incorporated the Patterson Ranch Company in 1908, with Thomas Patterson as president. The City of Patterson and the Patterson Colony are the outgrowth of Thomas Patterson.

Patterson first investigated all possible sources of irrigating the land. Learning that extension of the Miller & Lux canal north from Crows Landing would not be feasible, he set about developing his own irrigation system. Patterson conceived the idea of building a series of pump lifts to get water from the San Joaquin River into canals. Patterson risked over half a million dollars on the system, designed by Arthur L. Adams of Berkeley. The system was designed with a series of seven pump stations interconnected by reservoirs. The main canal was built with mules using Fresno scrapers. In 1910, water first flowed through the canals. The system was the first successful lift irrigation system in the world.

Patterson envisioned a town of beauty and distinction. Using Washington D.C. as model, Patterson designed the city in near complete circle, its streets converging like the spokes of a wheel on the Plaza at the center. Parks were laid out along the railroad. At great expense, 484 palm trees were imported from Australia and, alternated with eucalyptus trees, planted along the three miles of Las Palmas Avenue from the river to the town. Oleanders and sycamores were planted along the seven miles of Sycamore Avenue.

The Patterson Ranch Company subdivided the colony into 5-, 10-, and 20-acre plots. By fall 1911, 50 modern residences had been built. The original Patterson Colony Plat Map is shown in Figure VII-2. Patterson Irrigated Farms were advertised widely throughout the Midwest. The first two buildings in town were the Hotel Del Puerto and the Ranch Company office (the Plaza building). The Ranch Company office also housed the post office and the town's first bank. Cement sidewalks were laid in 1911, the *Patterson Irrigator* was first published, and Las Palmas Grammar School commenced construction. By the end of 1912, Patterson had a post office, railroad station, newspaper, school, library, Chamber of Commerce, electric lights and power, two lumber yards, telephone service, a hotel, two general merchandise stores and other shops.

Thomas W. Patterson died in 1914. His cousin, John D. Patterson, came from Canada to help guide the town and colony. Although the town faced some difficult economic conditions following the onset of World War I, Patterson continued to grow. On December 18, 1919, residents of Patterson voted 136 to 47 to incorporate Patterson as a city. In the mid-1920s Patterson received both national and state recognition as one of the few model towns in the United States. It was also recognized as one of the few successful California colonization projects.

Other notable milestones in Patterson's history include the first Las Palmas Bridge across the San Joaquin River, completed in 1936. Del Puerto Hospital began operation in 1950, made possible by the formation of the Del Puerto Hospital District in 1947. The Delta-Mendota Canal (part of the federal Central Valley Project) was completed in 1951. In 1967, Interstate 5 was completed as far south as Los Banos along with the California Aqueduct.

HISTORIC SITES AND BUILDINGS

Patterson contains a number of homes and structures built in the 1920s and 1930s. Three landmarks have been designated as sites of local and county historic significance, and are listed on the State Inventory of Historic Places, and one on the National Register of Historic Places.

- The Plaza building is located in the center of the Plaza circle. This structure was the original Patterson Ranch Company office and also housed the post office and the town's first bank. The Plaza building is presently used as the town's museum.

- The Del Puerto Hotel, located at 1 Plaza, was the town's first hotel where prospective land owners would stay while they were shown property of the Patterson colony. The building is privately owned.

- Las Palmas Avenue is a three-mile parkway lined with palm trees from Patterson to the San Joaquin River. Palm trees and eucalyptus trees were imported from Australia by Patterson founder and planted alternately along Las Palmas Avenue. Today, only the palm trees remain along this roadway.

- The Carnegie Library, located at 355 Las Palmas Avenue, was originally built as a City library with a Carnegie endowment. The building, now under private ownership, was renovated during 1990 and is operating as an office building. The Carnegie Library is listed on the National Register of Historic Places.

ARCHAEOLOGICAL RESOURCES

The Central California Information Center of the California Archeological Inventory completed a records search for the Patterson Planning Area in 1986. The search revealed no recorded archeological native American sites located within the Planning Area. To date, however, only about eight percent of Stanislaus County has been surveyed for archaeological resources.

A field reconnaissance of an area beyond the city limits was performed in March 1985. Potential areas of impact were examined for evidence of cultural material. Particular attention was paid to the Salado Creek area. No surface evidence of historical or cultural materials were uncovered. The lack of observable surface evidence is attributed to the amount of agricultural cultivation that has taken place over the last 50 years. In addition, Salado Creek was filled in from Highway 33 to the San Joaquin River and is now piped.

Areas that are considered sensitive (likely to have archaeological or historic cultural resources) are often located near natural watercourses, springs or ponds, and on elevated ground. Many archaeological sites in the Central Valley have been buried by silt and might not be evident by surface surveys. The channels of natural watercourses change over the years and springs dry up, therefore, archaeological sites may be found in areas that are distant from present sources of water.

Figure VII-2

PATTERSON COLONY PLAT MAP
1912

FINDINGS

- Patterson presently has about eight acres of developed parklands. This is substantially deficient, and the City has been collecting park in-lieu fees on new development to purchase and develop a major community park.

- The City's Recreation Department offers a wide variety of adult and youth recreation classes and programs.

- The annual Apricot Fiesta is the City's largest cultural event, drawing residents and non-residents to Patterson for the activities.

- Patterson has a rich history associated with Thomas W. Patterson's formation of the town and colony of Patterson and its farming roots.

- Three historic sites in Patterson are listed in the State Inventory of Historic Places: the Plaza building in the center of town; the Del Puerto Hotel; and palm-lined Las Palmas Avenue. The Carnegie Library is listed on the National Register of Historic Places.

- Most of the Planning Area has not been surveyed for the existence of archaeological resources. Sites along the San Joaquin River and watercourses are areas in which such resources are most likely to be located.

BIBLIOGRAPHY

Association of California Water Agencies, *75-Year History*, 1985.

"A Town's Founding," *The Gateway (A Patterson Township Historical Society Bulletin)*, Volume 1, Number 1, June 1978.

"Big, Big Fiesta Ahead!", *Patterson Irrigator*, June 2, 1988.

The California Indians, by R.F. Heizer and M.A. Whipple, University of California Press, Berkeley, California, 1971.

City of Patterson, *General Plan*, 1978.

City of Patterson, *Preliminary General Plan Environmental Impact Report*, 1984.

Stanislaus County, *General Plan Support Documents*, 1987.

PERSONS CONSULTED

Azevedo, John, Museum Curator, Patterson Historical Society

Bene, Joe, Recreation Director, City of Patterson (through 1991)

CHAPTER VIII

NATURAL RESOURCES

CHAPTER VIII

NATURAL RESOURCES

INTRODUCTION

Patterson's natural resources--its water, agricultural lands, soils, vegetation, wildlife, and air--contribute to the city's economy and are key elements in the quality of life of Patterson's residents. This chapter inventories and assesses the area's natural resources.

WATER RESOURCES

The quantity, quality, and availability of water is vital to both natural processes and human activities within any urban area. Water is essential to the development of housing, commerce, industry and agriculture, to recreation, and to the maintenance of high quality fish and wildlife habitats.

The Study Area is bordered on the east by the San Joaquin River. The California Aqueduct and Delta-Mendota Canal run near the western edge of the Study Area. Salado Creek and numerous irrigation canals pass through the Study Area. These water resources are shown in Figure VIII-1. Patterson also receives its potable water supply from the underlying groundwater basin.

Precipitation

The climate of the San Joaquin Valley is characterized by hot summers and cool rainy winters. During the summer months the San Joaquin Air Basin is influenced by a high pressure cell off the west coast. Within this cell, air descends almost continuously; the descending air is compressed, thereby raising its temperature and lowering the relative humidity. When this cell is dominant, there are no major storms nor any regionwide precipitation. During the winter the influence of this high pressure cell is intermittent, resulting in alternate periods of stormy, unsettled weather and periods of stable, rainless conditions.

The mean annual precipitation for Patterson is 10.73 inches. Most of the precipitation occurs from December to April; summer months are virtually rainless. Occasionally, Patterson receives rain during the summer months from thunderstorms.

San Joaquin River

The San Joaquin River is located on the eastern edge of the Study Area. The San Joaquin River provides water for agricultural, industrial processes, warm freshwater habitat for aquatic resources, habitat for fish spawning, migration routes for anadromous or other fish species, water supply and vegetative habitat for the maintenance of wildlife, and water and nonwater contact recreation.

The watershed of the San Joaquin River is the southern San Joaquin Valley, which encompasses 11,000 square miles, extending west from the Sierra Nevada crest to the Coast Ranges, and south from the San Joaquin Delta to the drainage dividing the San Joaquin and Kings Rivers. Principal tributaries of the San Joaquin River include the Stanislaus, Tuolumne, Merced, Chowchilla, and Fresno Rivers. All of these rivers are regulated by reservoirs.

The main stem of the San Joaquin River originates high in the Sierra Nevada crest and flows westerly to Millerton Lake, which is impounded by Friant Dam. Releases in the San Joaquin system flow north toward Stockton. At Friant Dam, a major portion of the flow is diverted into the Central Valley Project canal system operated by the U.S. Bureau of Reclamation (USBR). The segment of the river from the Merced River confluence to Mossdale, near Manteca, is characterized by high flows resulting from the Merced, Tuolumne, and Stanislaus River inflows, although streamflow in the valley during the summer consists mostly of irrigation return flows.

Water quality monitoring and flow for the San Joaquin River in the Patterson Area is conducted at the Vernalis stream station, located about 15 miles downstream from Patterson. The nearest station upstream from Patterson is located near Newman but this station does not have water quality monitoring capabilities.

At the gauging station in Vernalis, flow records for the period between 1930 and 1987 show an average flow of 4,759 cubic feet per second (cfs).

Streamflow in the San Joaquin River (at Vernalis) averaged about 2,505 cfs in 1987. Streamflow varies dramatically throughout the year. It is highest during winter and spring and lowest in late summer and fall. Maximum flow in 1985 was 6,000 cfs and minimum flow was 1,330 cfs.

At the gauging station north of Newman, flow records from 1912 to 1987 show a 2,088 cfs average flow rate. The average flow rate at this station was 673 cfs in 1987, with a minimum flow rate of 318 cfs and a maximum of 1,980 cfs.

San Joaquin River Water Quality

Waters at high elevations originate as snow melts and are of excellent quality, but irrigation drainage and waste discharges flowing into rivers on the valley floor continuously degrade water quality. Dissolved salts and nutrients in agricultural return flows, along with seepage from municipal and industrial percolation ponds, are the sources of water quality degradation. Low flows resulting from upstream diversion and regulation have virtually eliminated salmon runs in the basin streams and are endangering marshland wildlife.

Every two years, the State Water Resources Control Board (SWRCB) prepares an assessment of water quality of California streams and lakes. This assessment is based on data collected by the SWRCB and the State Department of Fish and Game. Those rivers and streams whose water quality is considered below basin plan objectives and/or water quality criteria established by EPA, are considered water quality-limited.

The segment of the river from Vernalis to the Stockton ship channel has been identified as a water quality-limited segment. Total dissolved solids exceed basin plan objectives, and dissolved oxygen is depressed along this stretch. Fish tested from the Vernalis station in 1985 showed high concentrations of synthetic organic compounds consisting of chlordane, DDT, PCB, and toxaphene, as well as detectible concentrations of arsenic, silver, cadmium, chromium, copper, mercury, nickel lead, selenium, and zinc. These chemicals and metals result primarily from agricultural return flows and discharge from urban areas.

The City of Patterson operates a wastewater treatment plant near the San Joaquin River. The City does not currently discharge effluent to the San Joaquin River, although it has a permit from the Central Valley Regional Water Quality Control Board (CVRWQCB). Treated effluent is evaporated in ponds located approximately one-half mile west of the river and, because of this distance, seepage into the river does

Figure VIII-1

WATER RESOURCES

— — — Indicates where Salado Creek is piped underground

N

Patterson Planning Area

not occur. The treatment plant treats only domestic waste at this time, and does not intend to discharge to the river until the treatment plant is operating at full capacity. Monitoring of nearby wells shows low or nonexistent bacterial counts, indicating that nearby groundwater quality has not been degraded by treatment plant operations.

Aqueducts

Approximately 1.5 miles east of Patterson, the two primary features of the State Water Project (SWP) and the Central Valley Project (CVP), the Edmund G. Brown California Aqueduct and the Delta-Mendota Canal, respectively, run north to south along the eastern fringe of the Coast Range. The Delta-Mendota Canal transfers water from the Sacramento-San Joaquin Delta area and distributes water to Central Valley water users, including those in the Patterson area. Although the California Aqueduct also distributes water to the Central Valley region, the California Aqueduct is distinguished by its capability to deliver water supplies to Southern California.

Salado Creek

Salado Creek originates in the Diablo Mountains south of Patterson, runs northerly through the city, and eventually drains into the San Joaquin River. Salado Creek collects drainage primarily from the Diablo Mountains. Salado Creek flows through an earth ditch from the Diablo Mountains east to the Southern Pacific Railroad lines. East of the railroad, Salado Creek is piped underground in two 36-inch pipelines to the San Joaquin River. The first pipeline was installed in 1963 to supplement the former open creek. In 1967, Salado Creek was filled in and a second pipeline was installed so that the creek bed could be farmed. One pipe starts near the Southern Pacific Railroad bridge, and the other starts at the northern end of the city and receives runoff from the city via three storm drain pipes.

During heavy storms, Salado Creek backs up and spills over its banks near the railroad culvert because the pipes are insufficient to handle the creek's flows. This leads to flooding in areas downstream along Highway 33 and Walnut Avenue. The City and County have committed funds for the U.S. Army Corps of Engineers to conduct a feasibility study to identify possible solutions to Salado Creek flooding. Flooding problems are discussed in Chapter IX, Health and Safety. Problems with the city's drainage system associated with Salado Creek are discussed in Chapter VI, "Public Facilities and Services."

No data on the water quality of Salado Creek are available from the CVRWQCB. Due to budget constraints, the CVRWQCB generally only collects data on major streams.

Groundwater

The City of Patterson and the entire San Joaquin Valley are underlain by the San Joaquin groundwater basin. Most groundwater in this basin occurs in two zones separated by the Corcoran Clay member of the Tulare Formation. The Tulare Formation consists partially of Corcoran Clay or "blue clay," an impervious layer of varying thickness that separates the upper and lower water bearing zones. In the Patterson area, Corcoran Clay is found at depths ranging from 260 feet to 304 feet below the land surface and varies in thickness from 40 feet to 60 feet.

The basin contains two water-bearing zones. The lower water-bearing zone is below the Corcoran Clay and contains confined fresh water. The upper water-bearing zone contains confined, semi-confined, and unconfined water in the upper section of the Corcoran Clay and younger deposits exclusive of the water within 25 feet of land surface. A shallow water-bearing zone is also found in the alluvium and flood-basin

deposits, which contain unconfined water within approximately 25 feet of land surface. Wells in the Patterson area are drilled to the lower water-bearing zone, at depths of 280 to 560 feet below the land surface.

The groundwater levels of the upper water-bearing zone are relatively high throughout the Study Area. However, groundwater elevations fluctuate from season to season. The Department of Water Resources (DWR) annually maps groundwater elevations in the Patterson area. In spring 1986, groundwater elevations in the Patterson area ranged from 50 feet to 60 feet mean sea level (MSL). Increases result from recharge due to precipitation, percolation, and snowmelt. Primary groundwater recharge areas are located on the east side of the San Joaquin River, although some recharge occurs from the San Joaquin River and the Diablo Mountains to the west of the Study Area, as well as from agricultural irrigation. In non-drought years, groundwater withdrawal in the Study Area is negligible because it is not the primary source of agricultural irrigation water.

Groundwater on the west side of the San Joaquin River has been described as substantially different from that of the east side of the river. Three major problems have been identified on the West side: a rising perched water table, saline buildup in the soil, and a drop in the water table during drought years. The perched, or high water table, has historically been the most significant problem in the Study Area. This is the shallow layer of water that in high water years and during irrigation season can rise to as much as three to five feet above the land surface. This causes problems for field crops and orchards that cannot tolerate wet or saturated soils. The U.S. Soil Conservation Service (SCS) monitors observation wells during irrigation season in the areas known to have the greatest problem, especially the southeastern portion of the Study Area. For years this problem has been successfully mitigated with the installation of underground tiles, which have effectively lowered the water table in those areas. Problems due to high water tables have temporarily abated in the last several years as a result of the drought.

The second problem, high salinity, often exists in areas with perched water tables, and concentrations of 2,000 parts per million, by volume (ppm) of chloride have been detected in the Study Area. High saline concentrations in both the perched water table and soils cannot be tolerated by most plants, thus making agriculture in those areas virtually impossible.

The third problem, and perhaps the most serious one, is the lowering of the water table during drought years. During the 1976-77 drought, the U.S. Bureau of Reclamation limited farmers' use of surface water by as much as 75 percent. As a result, many farmers were forced to use their deep wells to irrigate, which led to a serious drawdown in groundwater levels. The extensive use of groundwater caused some wells within the Study Area to go dry. This occurred not only in Patterson, but all over the West Side. Patterson's wells draw water from the lower aquifer, but many private domestic wells in the outlying rural areas drill to less than 100 feet.

In 1990, the third critically dry year of the current drought, USBR cut back irrigation deliveries by 50 percent, forcing farmers again to overdraft groundwater supplies and, in some cases, cultivate less acreage. The incidence of well dysfunction due to lower water tables seems somewhat less during the current drought, possibly because some problem wells were drilled deeper in response to the drought conditions of the late 1970's. (Glenn pers. comm.)

Since the 1976-77 drought, the SCS has monitored wells in late winter and after the irrigation season, which is usually October. This monitoring has enabled the SCS to watch water table levels and determine potential areas of overdraft. Although 1987-88 was a drought year, surface water supplies to irrigation

districts in the Study Area were not curtailed. The SCS predicts that the water table may lower if the current drought continues.

Groundwater Quality

Groundwater quality in the Patterson area is generally considered good. City wells are periodically sampled for organic chemicals, as required by state law. The most recent samples indicate that two of the five City wells showed traces of DBCP, a soil fumigant historically used for agricultural purposes. DBCP levels, however, were shown to be well below action limits and monitoring is being conducted quarterly to ensure that DBCP does not compromise Patterson's potable water system. One City well also showed traces of gross radioactivity well below action limits. California Department of Health indicated that such readings are not uncommon in the area.

Water hardness is a measure of the mineral content of the water supply. As mineral content increases, hardness also increases. Water quality of the Patterson area groundwater can be characterized as a sodium sulphate based water. Results of water quality collected in August 1986 from City well No. 5 show that groundwater has a high sodium sulphate content and is slightly alkaline.

Water Use

Water is used in the Study Area for residential, commercial, industrial, and agricultural purposes. Domestic wells provide the potable water supply for the Study Area. The City's water system and demand are described in Chapter VI, "Public Facilities and Services."

AGRICULTURAL SOILS AND RESOURCES

Agriculture constitutes a major portion of Stanislaus County's economic base. Approximately 781,856 acres were harvested in the county during 1988.

Agriculture is also the predominant land use in the Study Area. Dry beans, green beans, apricots, tomatoes, and mixed melons are the primary commodities, with spinach and peas also playing an important role. Figure VIII-2 indicates the predominant agricultural crops in the Study Area based on a survey performed by the California Department of Water Resources in 1981. Due to crop rotation and changes in demand for specific agricultural products, crops and orchards frequently change. Thus, Figure VIII-2 serves as a general indication of agricultural patterns in the Study Area but may not reflect actual crops in 1988.

In 1985, agriculture supported approximately 16.5 percent of the industry in Patterson and was responsible for approximately 16 percent of the City's employment. The three largest nonmanufacturing firms in Patterson are agriculturally related. The largest employer is a food processing plant.

Soils

The Study Area consists almost exclusively of soils that are well suited for agricultural production. Figure VIII-3 shows soil types as classified by the University of California for the western Stanislaus area. Table VIII-1 presents a summary of the soil types and their Storie index rating and soil grade.

Runoff from all soils in the Study Area is slow, except for the steeper sloped area in the western portion, where runoff is more rapid. Soil permeability ranges from slow to rapid and the hazard of wind erosion is slight.

Storie Index Rating

Soils in the Study Area are rated according to the Storie Index (1 though 7). This index expresses numerically the relative degree of suitability of a soil for general intensive agriculture. The rating is based on soil characteristics only and is obtained by evaluating such factors as depth of soil to layers restrictive to root and water penetration, texture of the surface soil, density and texture of the subsoil, drainage, salts and alkali, and surface relief. Other factors, such as availability of water for irrigation, climate, and distance from markets, that might determine the desirability of growing certain plants in a given locality, are not considered. Therefore, in itself, the index cannot be considered as an index of land value. It does, however, provide a rational base to which economics nd environmental factors may be coupled for comparative land evaluation.

Four general factors are considered in the index rating. These factors are (1) the characteristics of the soil profile and soil depth; (2) the texture of the surface soil; (3) slope or surface relier of the soil; and (4) other factors, such as drainage, salts and alkali, nutrient level (fertility), and microrelief. Each of these four general factors is evaluated on a percentage basis. A rating of 100 percent expresses the most favorable, or ideal condition, and lower percentage ratings are given for conditions that are less favorable for crop production.

For simplification, soils are placed in grades according to their general suitability for intensive agriculture as shown by their Storie Index ratings. The six grades and their range in Storie Index ratings are shown below.

Grade	Storie Index
1	80 to 100
2	60 to 80
3	40 to 60
4	20 to 40
5	10 to 20
6	less than 10

Soils of Grade 1 are excellent, or well suited to general intensive agriculture. Grade 2 soils are good and are also well suited to general intensive agriculture, although they are not so desirable as soils of Grade 1. Grade 3 soils are only fairly well suited. Grade 4 soils are poorly suited, and Grade 5 soils are very poorly suited. Grade 6 consists of soil and land types that are not suited to agriculture.

Although soils falling into grades 3, 4, and 5 are less desirable for general intensive agriculture, some may be highly desirable for certain crops because of special adaptation of the crop, or culture of the crop, to certain soil characteristics. For example, level, fine-textured, poorly-drained soils in Grade 4 may be much more desirable for rice culture than level, medium-textured, permeable soils in Grade 1. The Storie Index rating and soil grade for soils in the Study Area are given in Table VIII-1.

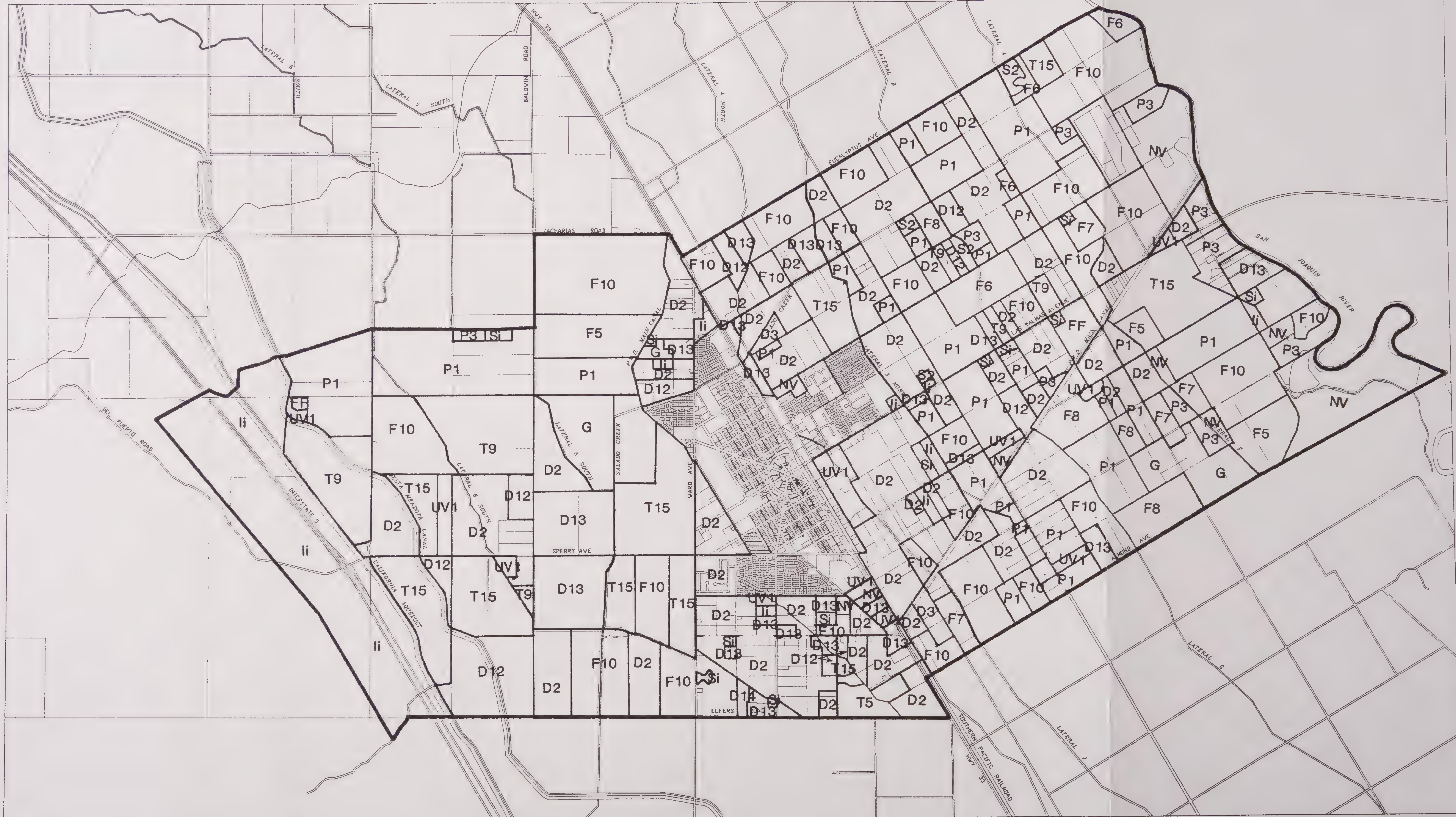


Figure VIII-2

PREDOMINANT AGRICULTURAL CROPS

Deciduous Fruits and Nuts
- D2 Apricots
- D3 Cherries
- D12 Almonds
- D13 Walnuts
- D14 Pistachios

Field Crops
- F5 Sugarbeets
- F6 Corn
- F7 Sorghum
- F8 Sudan
- F10 Beans

Truck Crops
- T5 Not Defined
- T9 Melons, Squash
- T15 Tomatoes

Miscellaneous
- UV1 Urban, Vacant
- Si Farmsteads
- P1 Alfalfa
- P3 Pasture
- G Grain
- Ii Idle
- NV Native Vegetation
- FF Fallow
- S2 Feedlots

Source: California Department of Water Resources, 1980.

Patterson Planning Area

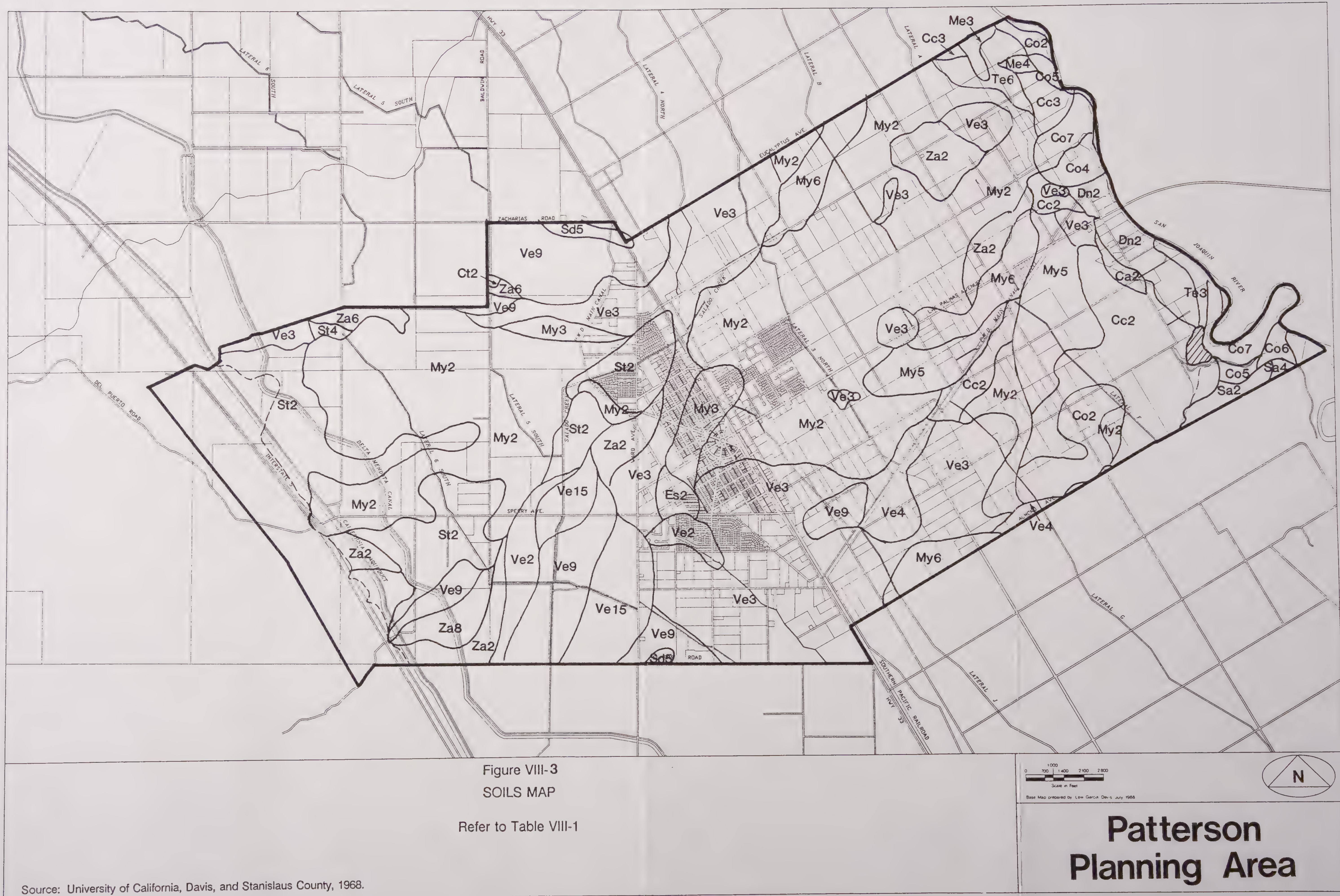


Figure VIII-3

SOILS MAP

Refer to Table VIII-1

Source: University of California, Davis, and Stanislaus County, 1968.

Land Capability

The U.S. Soil Conservation Service (SCS) is the primary source of information concerning the suitability of soils for agricultural use. The SCS has developed a "Land Capability Classification System" that organizes soils into eight categories designated by Roman numerals. Arable lands are organized into Classes I through IV. Nonarable lands are those unsuited for long-term cultivation. Classes V through VIII contain nonarable lands.

The SCS also uses another soils classification system: the "Important Farmland Inventory (IFI). The IFI is being used by the California Department of Conservation's Farmland Mapping and Monitoring Program. This program provides a source of information for state and local agencies concerned with agricultural land conversion. The IFI identifies four farm land categories: prime land, additional farmland of statewide importance, unique farmland, and additional farmland of local importance. The Prime Farmland designation is based on such factors as the availability of a reliable water supply, the area's temperature range, depth of the water table, soil permeability, and other considerations. Generally, soils receiving a Class I or II rating under the Land Capability Classification System are designated as IFI Prime Farmland. Much of the Study Area is potentially IFI Prime Farmland.

Soil mapping for the Land Capability Classification System has been completed in Stanislaus County. Figure VIII-3 shows the Land Capability Classification for soils in the Study Area. The Study Area contains Classes I, II, III, and IV, although Classes I and II are predominant. IFI mapping has not been completed for western Stanislaus County.

Soils in the Study Area that are categorized as Class I or II soils consist primarily of the Vernalis-Salado-El Solyo Association and the Myer-Stomar Association. These soils include approximately 90 percent of the soils in the Study Area and have few limitations restricting their use. Class III soils occur in isolated areas near the San Joaquin River. These soils have severe limitations that reduce the choice of plants or require special conservation practices.

Class IV soils occur primarily along the I-5 corridor, and their uses are restricted because most orchard fruit, nut, vine, and vegetable crops cannot be grown. Steep slopes, restricted depth, hardpan layers, coarse texture and poor drainage, saline-alkali slow permeability, and low water-holding capacity limit the uses of these soils.

Williamson Act

The California Land Conservation Act (Williamson Act), *California Government Code § 51290* et seq., encourages conservation of agricultural lands by providing a tax incentive to land owners who contract with the County to restrict land uses to agriculture and compatible uses. Approximately half of the land in the Study Area is currently restricted to agricultural use under Williamson Act contracts. Figure VIII-4 shows parcels under Williamson Act contracts in the Study Area. In recent years, owners of some of the Williamson Act parcels have filed for non-renewal, which begins a nine-year phase out period.

Agricultural Water Supply

A second principal factor for agricultural productivity is the availability of water. Three water districts serve the Study Area: the Patterson Water District, West Stanislaus Irrigation District, and the Del Puerto Water District. These water districts and their water supplies are discussed in Chapter VI, "Public Facilities and Services."

TABLE VIII-1

LIST OF SOIL TYPES AND RATINGS IN THE STUDY AREA

Soil Abbreviation	Soil Name	Storie Index Rating	Soil Grade
Ve9	Vernalis loam, 0-1% slopes	100	1
Sd2	Salado fine sandy loam, 0-2% slopes	100	1
Sd5	Salado loam, 0-2% slopes	100	1
Ve15	Vernalis silt loam,0-1% slopes	95	1
Ve3	Vernalis clay loam, 0-1% slopes	85	1
Co2	Columbia fine sandy loam, 0-1% slopes	85	1
St4	Stomar loam, 0-1% slopes	85	1
Za2	Zacharias clay loam, 0-1% slopes	81	1
Ve7	Vernalis gravelly loam, 0-1% slopes	80	1
Dn2	Dinuba fine sandy loam, 0-1% slopes	77	2
Za5	Zacharias gravelly clay loam, 0-1% slopes	76	1
Za6	Zacharias gravelly loam, 0-1% slopes	76	2
Za8	Zacharias clay loam, 0-1% slopes	76	2
Es2	El Solyo silty clay loam, 0-1% slopes	73	2
Ar2	Arbuckle clay loam, 0-2% slopes	73	2
My6	Myers clay loam, 0-2% slopes	72	2
Ve2	Vernalis clay, 0-1% slopes	70	2
St2	Stomar fine sandy loam, 0-2% slopes	68	2
Sd3	Salado fine sandy loam, sand substratum, 0-2% slopes	67	2
Ve4	Vernalis clay loam, water table, 0-1% slopes	60	2
Ca2	Camarillo clay loam, 0-1% slopes	57	3
My3	Myers clay, loamy substratum, 0-2% slopes	57	3
My2	Myers clay, 0-2% slopes	51	3
Co6	Columbia find sandy loam, water table, 0-1% slopes	50	3
Te6	Temple loam, water table, 0-1% slopes	48	3
My5	Myers clay, moderately well drained, 0-2% slopes	46	3
Co4	Columbis fine sandy loam, channeled	45	3
Co5	Columbia fine sandy loam, clay substratum, water table, 0-1% slopes	43	3
Te3	Temple clay loam, water table, 0-1% slopes	40	3
Sa4	Sacramento silty clay loam, 0-1% slopers	38	4
Me4	Merced clay loam, 0-1% slopes	36	4
Co7	Columbia soils, channeled	35	4
Cc2	Capay clay, 0-1% slopes	32	4
Sa2	Sacramento silty clay, 0-1% slopes	30	4
Cc3	Capay clay, water table, 0-1% slopes	25	4
Me3	Merced clay, 0-1% slopes	21	4
Rh	Riverwash	<10	6

Source: University of California, Davis, and Stanislaus County, *Soils of Westside Stanislaus Area, California* by J.C. McLaughlin and G.L Huntington, 1968.

Figure VIII-4

LANDS UNDER WILLIAMSON ACT CONTRACT

Prime Land Under Contract

Non-prime Land Under Contract

Source: Stanislaus County Planning Department, 1987-88.

N

Patterson Planning Area

VEGETATION AND WILDLIFE RESOURCES

Plant and animal resources in the Study Area occur in both natural and altered habitats. Natural habitats constitute less than five percent of the Study Area and include the following vegetation and habitat types: riparian, river channels, and valley grassland. Natural habitats associated with water are found primarily along the San Joaquin River. Valley grassland vegetation is scattered throughout the Study Area.

Altered habitats include cultivated and residential areas. More than 90 percent of the Study Area is either cultivated or grazed, and approximately 4 percent is urbanized. Although subject to human disturbance, these altered areas may still be valuable for wildlife.

Habitat Types

Five major habitat types have been identified in the Study Area. These habitats are shown in Figure VIII-5. Characteristics of the five habitats and the kinds of vegetation and wildlife resources associated with each are described below. Tables VIII-2 and VIII-3 give the scientific names of plant and animal species discussed in this section.

Riparian

Riparian shrublands and woodlands are water-dependent habitats that occur along levees and banks of waterways. North of the Las Palmas Avenue bridge on the San Joaquin River, the riparian vegetation consists of a narrow corridor of red willow with an occasional Fremont's cottonwood inside the levee. The understory consists of herbaceous plants and nonnative grasses. An oak woodland savanna community occurs north of the bridge and south of Olive Avenue along the San Joaquin River. This area is primarily open grassland, with scattered mature valley oaks.

Birds observed north of the bridge include: great blue heron, great egret, Swainson's hawk, red-tailed hawk, mourning dove, Anna's hummingbird, downy woodpecker, Nuttall's woodpecker, western kingbird, Cassin's kingbird, black phoebe, brown-headed cowbird, and house finch.

South of the Las Palmas Avenue bridge, the riparian vegetation is more extensive than to the north. The oxbow at the south end of the Study Area has a broad riparian woodland. Midway between the oxbow and bridge is a large stand of riparian woodland. These larger stands have a denser upper story of Fremont's cottonwoods, red willow, and, to a lesser degree, valley oaks than the downstream portion of the river. The understory includes willow shrubs and an occasional tree tobacco. The rest of the river bank supports open grassland and a narrow corridor of riparian woodland.

Birds observed south of the bridge include those mentioned above and also black-shouldered kite, California quail, Caspian tern, ash-throated flycatcher, European starling, house wren, and Brewer's blackbird.

Mammals that can be expected to be found in the riparian habitat are hoary bat, striped skunk, raccoon, mink, and Botta's pocket gopher. Several reptiles and amphibians are also likely to occur, including western fence lizard, valley garter snake, Pacific gopher snake, Pacific treefrog, and western toad.

River Channel

The river channel provides open water for many species of birds. Shallow water provides foraging habitat for shorebirds and wading birds, including great blue heron, great egret, killdeer, and spotted sandpiper. Deep water provides foraging habitat for Caspian and Forester's terns and various species of gulls.

Valley Grasslands

Valley grasslands in the Study Area occur along the San Joaquin River on lands not occupied by riparian vegetation, wetlands, or agricultural fields. Grasslands also occur in the foothills of the inner Coast Range along the western edge of the Study Area. Valley grasslands are dominated by many species of nonnative grasses and other herbaceous plants. Native species are also present but are now less abundant than they once were. Common plants of this habitat include bromes, wild oats, wild barley, and filaree.

Wildlife using valley grasslands include raptors (e.g., black-shouldered kite, northern harrier, Swainson's hawk, red-tailed hawk, American kestrel), songbirds (western kingbird, yellow-billed magpie, American crow, loggerhead shrike, and western meadowlark), and many others.

TABLE VIII-2

SCIENTIFIC NAMES OF PLANT SPECIES MENTIONED IN THE TEXT

Common Name	Scientific Name
Blackberries	*Rubus* sp.
Bromes	*Bromus* sp.
Delta coyote-thistle	*Eryngium racemosum*
Diamond-petaled California poppy	*Eschscholtzia rhombipetala*
Elderberry	*Sambucus* sp.
Filaree	*Erodium* sp.
Fremont's cottonwood	*Populus fremontii*
Red willow	*Salix laevigata*
Tree tobacco	*Nicotiana glauca*
Valley oak	*Quercus lobata*
Wild barley	*Hordeum sp.*
Wild oat	*Avena fatua*
Wild rose	*Rosa* sp.

Source: Jones and Stokes Associates

Figure VIII-5

HABITAT AREAS

Riparian vegetation

River channel

Valley grassland

Agricultural area

Urban area

Source: Jones & Stokes Associates, 1988.

N

Patterson Planning Area

TABLE VIII-3

SCIENTIFIC NAMES OF WILDLIFE SPECIES MENTIONED IN TEXT

Common Name	Scientific Name
Invertebrates	
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*
Amphibians	
Western toad	*Bufo boreas*
Pacific treefrog	*Hyla regilla*
Reptiles	
Blunt-nosed leopard lizard	*Gambelia silus*
Western fence lizard	*Sceloporus occidentalis*
Gopher snake	*Pituophis melanoleucus*
Giant garter snake	*Thamnophis couchi gigas*
Birds	
Great blue heron	*Ardea herodias*
Great egret	*Casmerodius albus*
Aleutian Canada goose	*Branta canadensis leucopareia*
Black-shouldered kite	*Elanus caeruleus*
Northern harrier	*Circus cyaneus*
Sharp-shinned hawk	Accipiter striatus
Cooper's hawk	*Accipiter cooperii*
Swainson's hawk	*Buteo swainsoni*
Red-tailed hawk	*Buteo jamaicensis*
American kestrel	*Falco sparverius*
Merlin	*Falco columbarius*
California quail	*Callipepla californica*
Greater sandhill crane	*Grus canadensis tabida*
Killdeer	*Charadrius vociferus*
Spotted sandpiper	*Actitis macularia*
Caspian tern	*Sterna caspia*
Forster's tern	*Sterna forsteri*
Mourning dove	*Zenaida macroura*
California yellow-billed cuckoo	*Coccyzus americanus occidentalis*
Burrowing owl	*Athene cunicularia*

Continued on next page

TABLE VIII-3

SCIENTIFIC NAMES OF WILDLIFE SPECIES MENTIONED IN TEXT (Continued)

Common Name	Scientific Name
Birds (continued)	
Short-eared owl	*Asio flammeus*
Anna's hummingbird	*Calypte anna*
Nuttall's woodpecker	*Picoides nuttallii*
Downy woodpecker	*Picoides pubescens*
Black phoebe	*Sayornis nigricans*
Ash-throated flycatcher	*Myiarchus cinerascens*
Cassin's kingbird	*Tyrannus vociferans*
Western kingbird	*Tyrannus verticalis*
Scrub jay	*Aphelocoma coerulescens*
Yellow-billed magpie	*Pica nuttalli*
American crow	*Corvus brachyrhynchos*
House wren	*Troglodytes aedon*
American robin	*Turdus migratorius*
Northern mockingbird	*Mimus polyglottos*
Loggerhead shrike	*Lanius ludovicianus*
European starling	*Sturnus vulgaris*
Yellow-rumped warbler	*Dendroica coronata*
Red-winged blackbird	*Agelaius phoeniceus*
Western meadowlark	*Sturnella neglecta*
Brewer's blackbird	*Euphagus cyanocephalus*
Brown-headed cowbird	*Molothrus ater*
House finch	*Carpodacus mexicanus*
Mammals	
Virginia opossum	*Didelphis virginiana*
Hoary bat	*Lasiurus cinereus*
Riparian brush rabbit	*Sylvilagus bachmani riparius*
Botta's pocket gopher	*Thomomys bottae*
San Joaquin Valley woodrat	*Neotoma fuscipes riparia*
San Joaquin kit fox	*Vulpes macrotis mutica*
Raccoon	*Procyon lotor*
Mink	*Mustela vison*
Striped skunk	*Mephitis mephitis*

Source: Jones and Stokes Associates

Agricultural Areas

Agriculture occupies most of the land within the Study Area. The value of this habitat to wildlife depends on several factors, such as crop type, irrigation systems, pesticide use, farming practices, and the surrounding land use.

Many of the wildlife species in valley grasslands, such as western meadowlark, red-winged blackbird, and mourning dove, also use agricultural fields. Swainson's hawks favor alfalfa fields for hunting. Orchards are used by many species of songbirds, including crow, magpie, scrub jay, and others.

Urban and Developed Areas

Residential and other developed areas occupy a large portion of the Study Area. Many species of animals use these areas, including American robin, scrub jay, yellow-rumped warbler, northern mockingbird, and Virginia opossum.

Special-Status Species

The Study Area is located within the general geographic ranges of several plant and wildlife species that are protected under state or federal endangered species law. Several species of special concern are also found in this region.

The California Natural Diversity Database (NDDB) (1987) has no record of state- or federally listed or candidate rare, threatened, or endangered plant or animal species in the Study Area. A few such species have been recorded within several miles of the Study Area, however, and some potential exists for these species to be found in the Study Area. Table VIII-4 lists species that could potentially occur in the Study Area, along with their legal status, and habitats. These species are discussed below.

Plants

- Delta Coyote-Thistle. The Delta coyote-thistle has been collected in lowland riparian and floodplain habitats in Merced, Stanislaus, and San Joaquin Counties. Most historic occurrences have been eliminated by flood control and agricultural activities. The species was thought for several years to be extinct, but it was found recently along the San Joaquin River in Merced County. It was also seen along the river north of the Study Area near Grayson in 1948. No populations are known from within the Study Area, but suitable habitat may exist.

- Diamond-Petaled California Poppy. Diamond-petaled poppy occurs in grassland habitats in the inner Coast Ranges from San Luis Obispo County to Contra Costa County. The species has declined because of grazing, competition from nonnative species, and habitat loss. It once occurred at a hillside north of the mouth of Del Puerto Canyon but has not been seen at this site since 1965 (California National Diversity Data Base 1987). This occurrence is located west of the Study Area, but other undiscovered populations could be present in the hills near Interstate 5 along the west boundary of the Study Area.

TABLE VIII-4

SPECIAL-STATUS PLANT AND WILDLIFE SPECIES

Species	Legal Status[1]	Potential Habitats in Study Area	Potential for Regular Occurrence
Delta coyote thistle	C2, SE	riparian, floodplain	low
Diamond-petaled California poppy	C2	grassland hills	low
Valley elderberry longhorn beetle	FT	mixed riparian woodland	low
Swainson's hawk	C2, ST	mixed riparian woodland, annual grassland	high
Cooper's hawk	SSC	mixed riparian woodland, savanna	moderate
Sharp-shinned hawk	SSC	mixed riparian woodland, savanna	moderate
Merlin	SSC	mixed riparian woodland, oak savanna, grassland	low
Northern harrier	SSC	annual grassland	low to moderate
Short-eared owl	SSC	annual grassland	low
Burrowing owl	SSC	annual grassland	low
Aleutian Canada goose	FE	grain crops	low
Greater sandhill crane	ST	grain crops	low
Western yellow-billed cuckoo	C2, ST	riparian forest	low to none
Giant garter snake	C2, ST	wetlands, canals	low
Blunt-nosed leopard lizard	FE, SE	undisturbed open areas	low
Riparian brush rabbit	C2, SSC	riparian brush	low to none
San Joaquin Valley woodrat	C2, SSC	riparian forest	low to none
San Joaquin kit fox	FE, ST	grasslands	low
Great blue heron	None	river, agricultural lands	high

[1] FE = Federally listed as endangered
FT = Federally listed as threatened
C2 = Federal candidate (Category 2)
SE = State listed as endangered
ST = State listed as threatened
SSC= State species of special concern

Sources: California Department of Fish and Game, 1978, 1986, 1988; Stanislaus Area Association of Governments, 1974; U.S. Fish and Wildlife Service, 1985.

Animals

- Great Blue Heron. Although great blue herons are not a state- or federally listed species, they are sensitive to disturbance during the breeding season. A heron rookery is shown on Stanislaus County'sbiological factors map, downstream of the Study Area. Great blue herons observed feeding in the San Joaquin River during the wildlife survey were probably from that rookery. The river and agricultural fields are probably important heron feeding areas.

- Aleutian Canada Goose. Aleutian Canada geese winter in the Central Valley of California. One of only several major wintering areas occurs at the junction of the Tuolumne and San Joaquin Rivers, near Modesto. These geese feed in pastures and grain fields in agricultural areas. Although not known to occur in the Study Area, the Modesto birds could feed in the agricultural fields.

- Swainson's Hawk. Several known Swainson's hawks occur north and south of the Study Area. The NDDB (1987) has no record of this species in the Study Area.

  Three Swainson's hawks were observed during the wildlife surveys, two north of the Las Palmas Avenue bridge on the San Joaquin River, and one south of the bridge. At least two nesting territories may occur in the Study Area. Trees suitable for nesting were present in the oak woodland-grassland area north of Las Palmas bridge (near where the pair of Swainson's hawks were observed) and in two extensive riparian areas south of the bridge. No nests were found during the wildlife survey, but they are often difficult to locate because they are placed within dense foliage.

  The U.S. Fish and Wildlife Service has become progressively rigorous in its approach towards requiring development interests to thoroughly mitigate impacts to the Swainson's hawk. This pressure has compelled various Central Valley municipalities to pursue mitigation measures organized on a regional basis. County-level efforts to develop such suitable mitigation measures are currently underway in neighboring San Joaquin County.

  The Study Area contains suitable foraging areas in alfalfa, hay, and wheat fields. These crops occur near suitable nest trees. Loss or crop conversion of alfalfa fields could reduce foraging habitat for these birds. In addition, a loss of riparian trees (cottonwoods and valley oaks) could eliminate nests or reduce nest tree availability.

- Greater Sandhill Crane. The Study Area is located within the wintering range of the greater sandhill crane. Although this is not a major wintering area, these birds may stop and forage in agricultural fields. The wildlife survey was conducted after the cranes migrated out of the valley, so crane use of the area could not be determined.

- Western Yellow-Billed Cuckoo. Yellow-billed cuckoos require stands of willow-cottonwood forest greater than 25 acres in extent and wider than 300 feet. No habitat in the Study Area meets these criteria. No cuckoos were found during the wildlife survey.

- Giant Garter Snake. The Study Area is located within the range of the giant garter snake. This snake requires marshes or canals overgrown with tules and associated grassy, open upland. Hanson and Brode (1980) found no giant garter snakes between Gustine, Merced County, and Stockton, San Joaquin County. The NDDB (1987) has no record of this snake in the Study Area.

Giant garter snakes could occur in the oxbow in the south end of the Study Area, on the San Joaquin River. This area was not well covered during the wildlife survey, however, because access was not granted to all private properties.

- Blunt-Nosed Leopard Lizard. The geographic range of the blunt-nosed leopard lizard includes the Study Area. This lizard inhabits sparsely vegetated plains, alkali flats, low foothills, grasslands, canyon floors, large washes, and arroyos. The Study Area contains only a small amount of these habitats. The NDDB (1987) has no record of this lizard for the area. None were observed during the wildlife survey.

- Riparian Brush Rabbit. The riparian brush rabbit is known to occur only along the lower Stanislaus River at Caswell State Park. Other small colonies may exist between Caswell State Park and the confluence of the Stanislaus and San Joaquin Rivers. The brush rabbit once occurred in northern Stanislaus County along the west side of the San Joaquin River and may still occur at other locations in suitable habitat.

  The riparian brush rabbit occupies areas where wild rose, willows, and blackberries grow in dense stands along river banks. Two sites within the Study Area on the San Joaquin River may support suitable habitat. The first, a dense willow thicket with a cottonwood overstory, is located approximately one mile south of the Las Palmas Avenue bridge. A second suitable site is at the oxbow lake at the southeast end of the Study Area. No brush rabbits were found during field surveys. The suitable habitat at the oxbow lake, however, was not well surveyed because landowners did not grant suitable access to the property. If alteration of the riparian vegetation on the San Joaquin River is proposed, more thorough surveys should be conducted for this species.

- San Joaquin Valley Woodrat. San Joaquin Valley woodrats (a subspecies of the dusky-footed woodrat) are known only from the San Joaquin, Stanislaus, and Tuolumne Rivers in Stanislaus and San Joaquin Counties. The closest known population to the Study Area is at Caswell State Park, San Joaquin County. Another population may occur at Corral Hollow, San Joaquin County. The closest recorded occurrence to the Study Area is two miles northeast of Vernalis in Stanislaus County. Specific habitat requirements of the San Joaquin Valley subspecies of the dusky-footed woodrat are not well understood. The species generally occupies areas supporting a mixture of trees and brush. Woodrats nest in cavities in trees, snags, and logs, or lodges built of downed woody material.

  Two sites in the Study Area may have suitable habitat for the San Joaquin Valley woodrat. One site is the oxbow lake on the San Joaquin River, and a second site is approximately one mile south of Las Palmas Avenue bridge. The oxbow lake was not surveyed for woodrat habitat. The second site, which was surveyed, has dense willow thickets with a cottonwood overstory, but no woodrat nests were observed. The cottonwoods may not provide suitable nest cavities.

  If alteration of the riparian vegetation on the San Joaquin River is proposed, more thorough surveys should be conducted for this species. Because the species is nocturnal, surveys should involve nest searches and overnight live-trapping.

- San Joaquin Kit Fox. The geographic range of the San Joaquin kit fox includes the Study Area. Preferred habitats includ saltbush scrub, valley grassland, oak woodlands, and freshwater marshes. The NDDB (1987) has no record of the kit fox for the area. No extensive surveys were conducted to locate kit foxes or possible dens. If abundant prey exists in the vicinity, kit foxes would most

likely occur in uncultivated areas, canal levees, highway and railway berms, culverts under roads, and remnant drainages in agricultural areas. More extensive surveys would be required to determine the species' status in the area.

- Valley Elderberry Longhorn Beetle. The valley elderberry longhorn beetle (VELB) requires elderberry shrubs as a host plant. The NDDB (1987) has no record of this beetle in the Study Area. No elderberry shrubs were located during the wildlife survey, but the oxbow on the river, a suitable area, was not surveyed. The VELB could occur in areas along the San Joaquin River not thoroughly surveyed. A more thorough survey should be conducted if alteration of the riparian habitat along the San Joaquin River is proposed.

- Wintering Raptor Species of Special Concern. Four species of raptors designated by DFG as species of special concern could occur in the Study Area during the winter, including Cooper's hawk, sharp-shinned hawk, merlin, and short-eared owl. No surveys were conducted during the winter to determine their status in the Study Area. These raptors could use the riparian habitat along the San Joaquin River and adjacent grasslands and agricultural lands for foraging. The merlin and owl are not expected to use the Study Area on a regular basis.

- Breeding Raptors of Special Concern. The breeding ranges of burrowing owls and northern harriers include the Study Area. Northern harriers breed in undisturbed grasslands and marshes. Grasslands constitute a small percentage of the Study Area, and no marshes were located. Therefore, harriers probably do not breed in the area.

- Burrowing owls occur in dry, open grasslands and in agricultural areas if breeding sites are undisturbed. This owl may occur with ground squirrels in the grasslands, agricultural areas along irrigation canals, and levees. No burrowing owls were observed during the wildlife survey, but they could have occurred and been missed because the surveys were not extensive. Development in grasslands and in agricultural fields could result in a significant impact on this species. Ground squirrel control programs could also be detrimental.

AIR RESOURCES

The city of Patterson lies within the San Joaquin Valley Air Basin, which is bounded by the coastal mountain ranges on the west and the Sierra Nevada range on the east. The Carquinez Strait is a sea level gap in the coastal range; the strait lies approximately 70 miles northwest of the Study Area, and the intervening terrain is flat. The prevailing wind direction in the Study Area is from the northwest, owing to marine breezes through the Carquinez Strait. During winter the sea breeze diminishes. Table VIII-5 presents climatological data for Stanislaus County.

TABLE VIII-5

CLIMATOLOGICAL DATA FOR PATTERSON

Period	Average Temperature (°F) Minimum	Mean	Maximum	Average Rain (inches)
January	34	43	52	5.56
April	43	61	79	1.31
July	57	77	97	.27
October	48	66	84	3.54
Year	47	62	77	10.68

Source: Patterson Chamber of Commerce, 1988.

Emissions

Urban emission sources in the Stanislaus County area are a primary source of two existing air quality problems. Federal and state air quality standards for ozone and carbon monoxide (CO) have been exceeded in Stanislaus County. As a consequence, Stanislaus County has been designated as a "nonattainment area" with respect to the federal ozone and CO standard.

Recent passage of a new California Clean Air Act (AB2595) substantially added to the authority and responsibilities of air pollution control districts (APCDs). The new Clean Air Act designates APCDs as lead air quality planning agencies, requires APDCs to prepare air quality plans, and gives APCDs the authority to implement transportation control measures and indirect source review rules.

Since Stanislaus County is a non-attainment area for both ozone and carbon monoxide, the new Clean Air Act requires the Stanislaus County Air Pollution Control District to prepare an attainment plan. Stanislaus County has been identified as both a recipient of pollution transport from other counties as well as source of pollutants transported outside the county. The new Clean Air Act provides a June 31, 1991, deadline for submittal of an air quality attainment plan.

Table VIII-7 and Table VIII-8 list the sources of emissions that contribute to the ozone and CO air quality problems. The data are disaggregated by emission source category. Table VIII-7 also includes California Air Resources Board's projections for future emissions.

TABLE VIII-6

SUMMARY OF AIR QUALITY MONITORING DATA FOR STANISLAUS COUNTY

Monitoring Station	Parameter	CARBON MONOXIDE 1984	1985	1986	1987	1988	1989	OZONE 1984	1985	1986	1987	1988	1989
Modesto: 14th Street	Peak hour value[a]	15.0	15.0	18.0	12.0	17.0	N/A	0.14	0.14	0.13	0.14	0.12	0.12
	Peak 8-hour value[a]	8.4	11.0	11.3	8.8	13.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Days above standard[b]	0	2	4	0	2	N/A	4	3	2	5	N/A	N/A
Turlock: Monte Vista	Peak hour value[a]							0.16	0.15	0.12	0.15	0.14	0.13
	Peak 8-hour value[a]							N/A	N/A	N/A	N/A	N/A	N/A
	Days above standard[b]							11	8	0	15	4	3
Crows Landing: Davis Road	Peak hour value[a]				N/A	2.0	1.0				N/A	0.13	0.11
	Peak 8-hour value[a]				N/A	1.1	1.0				N/A	N/A	N/A
	Days above standard[b]				N/A	0	0				N/A	1	N/A

[a]Peak hour and peak 8-hour values given as parts per million by volume (ppm).
[b]For ozone, days with peak 1-hour value exceeding federal primary standard of 0.12 ppm; for carbon monoxide, days with a peak 8-hour average value exceeding the federal primary and state standards of 9 ppm.

Source: California Air Resources Board (1984-1989).

TABLE VIII-7

EXISTING AND PROJECTED REACTIVE ORGANIC GASES EMISSIONS FOR STANISLAUS COUNTY IN AVERAGE ANNUAL TONS PER DAY

Source Category	1985	1990*	1995*	2000*	2005*	2010*
Fuel Combustion	0.16	0.21	0.23	0.26	0.28	0.30
Waste Burning	1.83	2.01	2.15	2.30	2.46	2.61
Solvent Use	8.98	8.96	10.17	11.17	12.08	12.96
Petroleum Process (Storage & Transfer)	0.56	0.53	0.49	0.44	0.40	0.37
Industrial Processes	0.65	0.76	0.84	0.90	0.96	1.01
Miscellaneous Processes	4.50	4.90	5.26	5.62	6.00	6.37
Stationary Sources	16.68	17.36	19.13	20.68	22.19	23.63
On-Road Vehicles	17.11	11.65	8.54	7.58	7.60	8.08
Other Mobile Sources	3.31	3.66	3.95	4.21	4.47	4.72

* *Projected*

Source: California Air Resources Board, 1989

TABLE VIII-8

EXISTING AND PROJECTED NITROGEN OXIDE EMISSIONS FOR STANISLAUS COUNTY IN AVERAGE ANNUAL TONS PER DAY

Source Category	1985	1990*	1995*	2000*	2005*	2010*
Fuel Combustion	3.06	3.79	4.24	4.60	4.90	5.34
Waste Burning	-	-	-	-	-	-
Solvent Use	-	-	-	-	-	-
Petroleum Process (Storage & Transfer)	-	-	-	-	-	-
Industrial Processes	3.23	4.01	5.03	5.64	6.03	6.38
Miscellaneous Processes	0.01	0.01	0.01	0.01	0.01	0.01
Stationary Sources	6.30	7.81	9.28	10.25	11.01	11.73
On-Road Vehicles	19.21	17.08	16.17	16.70	17.86	19.42
Other Mobile sources	6.88	7.30	7.70	8.19	8.63	9.05

* *Projected*

Source: California Air Resources Board, 1989

TABLE VIII-9

EXISTING AND PROJECTED CARBON MONOXIDE EMISSIONS FOR STANISLAUS COUNTY IN AVERAGE ANNUAL TONS PER DAY

Source Category	1985	1990*	1995*	2000*	2005*	2010*
Fuel Combustion	1.73	2.25	2.49	2.73	2.99	3.27
Waste Burning	31.37	34.50	37.04	39.71	42.65	45.37
Solvent Use	-	-	-	-	-	-
Petroleum Process (Storage & Transfer)	-	-	-	-	-	-
Industrial Process	-	-	-	-	-	-
Miscellaneous	0.74	0.64	0.65	0.65	0.65	0.65
Stationary Sources	33.84	37.40	40.18	43.09	46.30	49.29
On-Road Vehicles	128.88	107.48	92.49	88.51	90.63	96.12
Other Mobile Sources	24.81	28.29	31.12	33.63	36.09	38.39

* *Projected*

Source: California Air Pollution Resources Board, 1989.

Air Quality Standards

The federal Clean Air Act established air quality standards for several pollutants, and requires areas that violate these standards to prepare and implement plans to achieve the standards by certain specified deadlines. Although the deadline for attaining both the ozone and CO standards in Stanislaus County was December 31, 1987, both air quality standards continue to be exceeded as of 1990.

Both the state and federal governments have established a variety of ambient air quality standards. The state one-hour ozone standard is 0.10 ppm (parts per million, by volume), not to be equaled or exceeded. The federal one-hour ozone standard is 0.12 ppm, not to be exceeded more than three times in any three-year period.

The County did not achieve attainment of ozone or carbon monoxide standards as of December 31, 1987. The ozone level was 13 ppm, 1 ppm over the 12 ppm standard. Although the actions that should be taken to achieve attainment have not been determined by the County or ARB, the County has completed emissions evaluations of all smaller sources in the county, including furniture repair businesses, auto body and auto paint shops, wood strippers, and engine rebuilders.

State and federal CO standards have been set for both one-hour and eight-hour averaging times. The state one-hour CO standard is 20 ppm, while the federal one-hour standard is 35 ppm. Both state and federal

standards are nine ppm for eight-hour averaging period. State and federal CO standards are phrased as values not to be exceeded more than once a year.

Outdoor CO levels are a fairly reliable indicator of potential indoor CO levels. Carbon monoxide is not chemically reactive and is poorly soluble in water. Thus, it is not adsorbed on surfaces or otherwise removed from outdoor air entering a building through open doorways, open windows, or building ventilation systems.

Ozone

Ozone, the main component of photochemical smog, is primarily a summer/fall period pollution problem. Federal and state ozone standards have been periodically exceeded in parts of Stanislaus County for many years. The major contributors to regional ozone problems are motor vehicle emissions and evaporation of various organic compounds (fuels, solvents, etc.).

Ozone is not emitted directly into the air, but is formed through a complex series of chemical reactions involving other compounds (various organic compounds, nitric oxides, and nitrogen dioxide) which are directly emitted. The time required for these reactions allows the reacting compounds to be spread over a large area, which produces a regional pollution problem. Ozone problems are the cumulative result of regional development patterns, rather than the result of a few incrementally significant emission sources.

The ozone standard has been violated at both of the Stanislaus County ozone monitoring stations that have been operated since 1984. The ozone standard was violated 15 days in 1987, 4 days in 1988, and on 3 days in 1989.

Carbon Monoxide

Carbon monoxide is primarily a winter period pollution problem. Motor vehicle emissions are the dominant source of CO in most areas. As a directly emitted pollutant, transport away from the emission source is accompanied by dispersion and reduced pollutant concentrations. Consequently, CO problems are usually rather localized, often resulting from a combination of high traffic volumes and significant traffic congestion.

The federal and state eight-hour CO standards have been exceeded up to four days per year at the 14th Street monitoring station in Modesto and two days since 1987. The monitoring station in Turlock was not equipped to monitor CO.

CO problems typically occur in the vicinity of major traffic arteries with significant amounts of commercial development. The presence of significant commercial development is probably an important contributing factor for two reasons. Parking lots for such developments represent a localized source of emissions which augments the CO emissions from vehicle traffic on adjacent roadways. Additionally, vehicles leaving major parking lots are likely to be in a "cold start" operating mode, resulting in higher CO emission rates than is typical for "through" traffic on major roadways.

Meteorological conditions also affect the development of CO problems significantly. High CO levels develop primarily during winter months when periods of light winds or calm conditions combine with the formation of ground level temperature inversions (typically in the evening through early morning period).

These conditions result in reduced dispersion of vehicle emissions, allowing CO problems to develop and persist during hours when traffic volumes are declining from peak levels. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

Particulate Matter

Particulates are composed of smoke, dust, soot, pollens, and aerosols. The primary source of particulate emissions in Stanislaus County are from agricultural tillage and harvesting.

State and federal standards for suspended particulate matter have been set for two time periods: a 24-hour average and an annual geometric mean of the 24-hour values. Until recently, the federal and state particulate matter standards applied to a broad range of particle sizes.

Health concerns associated with suspended particles focus on those particles small enough to reach the lungs when inhaled. Few particles larger than 10 microns in diameter (one micron is about 0.00004 inches) reach the lungs. Consequently, both the federal and state air quality standards for particulate matter have been revised to apply only to these small inhalable particles (generally designated PM_{10}).

The State PM_{10} standards are 50 micrograms per cubic meter as a 24-hour average and 30 micrograms per cubic meter as an annual geometric mean. The federal PM_{10} standards are 150 micrograms per cubic meter and 50 micrograms per cubic meter as an annual geometric mean.

It is questionable whether Stanislaus County is in attainment of PM_{10}. Although data from the Crows Landing monitoring station south of Patterson has not yet been published, according to the APCD, exceedence of the PM_{10} standard was recorded at this station recently. The time of exceedence was recorded during bean harvesting at a site approximately 40 feet from the monitoring station, which could have biased the data. The data, along with pictures of dust during bean harvesting and records of the harvest, were sent to the ARB. A determination of nonattainment has not yet been made. This is the only violation recorded in the county and no action is being taken as of August 1988.

Point Sources

There are two recent major point sources of pollution located near Patterson: a plant which burns tires to generate electricity located in Westley, about five miles north of Patterson, and a waste-to-energy plant under construction west of Crows Landing. The tire-burning plant is monitored at least three times a week and all emissions are recorded every six minutes. According to the APCD, there have been no emissions violations to date. A monitoring station is currently under construction near Westley to be completed in early 1989. This station will record daily emissions of nitrogen oxides, sulfur oxides, carbon monoxide, carbon dioxide, ozone, and particulates.

The waste-to-energy plant will burn municipal solid waste to generate electricity. When completed in late 1988, this plant will also be equipped to monitor and record emissions data at least three times per week.

MINERAL RESOURCES

The Study Area is not characterized with the soils or topography associated with mineral resources. No mineral-bearing geologic formations or sediments of economic value are known to exist.

FINDINGS

- Water quality in the San Joaquin River has been degraded by urban runoff and agricultural irrigation water, which has reduced the suitability of this water for agricultural and domestic use. Poor water quality may limit the ability of the City to discharge sewage effluent to the river in the future.

- The city receives its potable water supplies from the groundwater basin. The groundwater levels underlying the Study Area are relatively high, however, groundwater elevations fluctuate from season to season.

- Three major problems have been identified in western Stanislaus County: a rising perched water table, saline buildup in the soil, and a drop in the water table during drought years.

- Overdrafting of groundwater during the 1976-77 drought caused some private wells in the Study Area to go dry. Since then, the U.S. Soil Conservation Service has monitored wells in late winter and after the irrigation season to watch water table levels and determine potential areas of overdraft. The SCS predicts that overdrafting could become a problem if the current drought continues.

- The Study Area consists almost exclusively of soils that are well suited for agricultural production (Class I and II soils). A significant portion of these lands are under Williamson Act contract.

- The Study Area supports the state-threatened Swainson's hawk, which may nest in riparian woodlands and feed in agricultural fields on the site. Loss of nesting or foraging habitat could be detrimental to the species.

- The riparian woodlands in the Study Area provide important habitats for other wildlife species, including potentially the federally threatened valley elderberry longhorn beetle. If the beetle is present, actions that affect the beetle would require formal consultation with U.S. Fish and Wildlife Service to assure that the species is not jeopardized. Loss of riparian habitats can also impact other dependent, unlisted species.

- Several special-status plants may occur in grassland and floodplain habitats in the Study Area. Surveys should be conducted during the proper seasons before approval of any new land-disturbing activities.

- Grassland and agricultural lands provide valuable habitats for several other special-status species. Loss of these habitats may result in significant impacts to biological resources, depending on the species present and levels of use.

- Further study may be necessary to evaluate the importance of wildlife habitat areas and to determine the presence or absence of special-status species.

- Stanislaus County has been determined to be in nonattainment of federal and state carbon monoxide standards. It is slightly over federal standards for ozone.

- Two major point sources of pollution are located near Patterson. A tire-burning facility is located in Westley, about five miles north of Patterson, and a municipal waste-to-energy facility is under construction west of Crows Landing, about six miles southwest of Patterson.

BIBLIOGRAPHY

Air Quality Task Force, *Stanislaus Air Quality Plan*, 1982.

California Air Resources Board, *California Air Quality Data, Volume XVII-1985 Annual Summary*, 1987.

California Air Resources Board, *California Air Quality Data, Volume XVI-1984, Annual Summary*, 1985.

California Air Resources Board, *California Air Quality Data, Volume XVII-1985 Annual Summary*, 1986.

California Department of Fish and Game, *1987 Annual Report on the Status of California's State-Listed Threatened and Endangered Plants and Animals*, 1988.

California Department of Fish and Game, *At the Crossroads: Report on the Status of California's Endangered and Rare Fish and Wildlife*, 1980, Amended 1983.

California Department of Fish and Game, *Bird Species of Special Concern in California: An Annotulnerable Bird Species* (Wildlife Management Branch Administration Report 78-1) by J. Remsen, Jr., 1978.

California Department of Fish and Game, *California Natural Diversity Data Base*, (Unpublished database report), 1987.

California Department of Fish and Game, *Mammalian Species of Special Concern in California* (Wildlife Management Division Administrative Report 86-1), 1986.

California Department of Fish and Game, *San Joaquin Kit Fox Distribution and Abundance in 1975* (Wildlife Management Branch Administration Report 75-3) by S. Morrell, 1975.

California Department of Fish and Game, *Status of the Giant Garter Snake*, (Inland Fisheries Endangered Species Program, Special Publication 80-5.), by: G.E. Hanson and J.M. Brode, 1980.

California Department of Fish and Game, *The Status of Swainson's Hawk in California* (Nongame Wildlife Investigations Project W-54-R-12, Job 11-8.0.), 1980.

California Department of Fish and Game, *Toxic Substances Monitoring Program 1985 Data Report*, Prepared for State Water Resources Control Board, 1986.

California Native Plant Society, *The Geographic and Edaphic Distribution of Vernal Pools in the Great Central Valley, California*, (Special Publication No. 4.) by R.F. Holland, 1978.

Importance of Riparian Systems to Nesting Swainson's Hawks in the Central Valley of California. by R.W. Schlorff and P.H. Bloom, University of California Press, Berkeley, CA., 1984.

Patterson-Westley Chamber of Commerce, *Community Economic Profile for Patterson, 1988*.

Review of the Status of the Yellow-billed Cuckoo in California: Sacramento Valley Populations by David Gaines, 1974.

Stanislaus Area Association of Governments, *Environmental Resources Management Element* -Wildlife and Vegetation, 1974.

Stanislaus Area Association of Governments, *Environmental Resources Management Element -Soils*, 1974.

Stanislaus Area Association of Governments and the Stanislaus County Air Pollution Control District, *Reasonable Further Progress Annual Report for the Calendar Year 1986*, 1987.

Stanislaus County Department of Agriculture, *Stanislaus County Agricultural Crop Report.* 1987.

Stanislaus County, *Stanislaus County General Plan Support Documents*, 1987.

University of California, Davis, and County of Stanislaus, *Soils of Westside Stanislaus Area, California* by J.C. McLaughlin and G.L. Huntington, 1968.

U.S Geological Survey, *Data for Selected Pesticides and Volatile Organic Compounds for Wells in the Western San Joaquin Valley, California, February to July 1985* (Open-File Report 87-48.) by J.M Neill, 1987.

U.S. Army Corps of Engineers. *Lower San Joaquin River, California: Aerial Atlas*. 1976.

U.S. Geological Survey, *Water Resources Data for California Water Year 1985, Volume 3* 1987.

U.S. Geological Survey, Water Resources Division, *Geology, Hydrology, and Water Quality of the Tracy-Los Palos area, San Joaquin, California*, (Open-File Report: 72-169), by W.R. Hotchkiss and G.O. Balding, 1971.

PERSONS CONSULTED

Brode, John, Nongame Wildlife Biologist, California Department of Fish and Game

Carson, Eugene, General Manager, West Stanislaus Irrigation District

Fourt, Bob, Geologist, Stanislaus County Department of Environmental Resources

Glenn, Eldon, Manager, U.S. Soil Conservation Service

Harrison, Bill, Manager, Del Puerto Water District

King, Holman, Unit Wildlife Biologist, California Department of Fish and Game

Lopez, Ignacio, Public Works Director, City of Patterson

Morrick, Bill, State Geologies, California Department of Water Resources

Perry, Joe, Patterson Water District

Reeves, Gary, Stanislaus County Air Pollution Control District

GLOSSARY

Air Pollutant Emission - Discharges into the atmosphere, usually specified in terms of weight per unit of time for a given pollutant from a given source.

Air Pollution Control District (APCD) - A single or multi-county agency with legislative authority to adopt and enforce all rules and regulations necessary to control nonvehicular sources of air pollutants in the area.

Air Quality Standard - A health-based standard for air pollution established by the federal government and the state.

Ambient Air Quality - The quality of the air at a particular time and place.

ARB - California Air Resources Board

cfs - Cubic feet per second

CO - Carbon monoxide

DFG - California Department of Fish and Game

Habitat - The natural environment of a plant or animal

HC - Hydrocarbons

Land Capability Classification - The U.S. Soil Conservation Service's grouping of soils into classes (I through VIII), subclasses, and units according to their suitability for agricultural use, based on soil characteristics and climatic conditions

NBBD - California Natural Diversity Database, published by the California Department of Fish and Game

NO_x - Nitrogen oxides

PM_{10} - Particulate matter less than 10 microns in diameter

Riparian Habitat - The land and plants bordering a watercourse or lake

SCS - U.S. Soil Conservation Service

USFWS - U.S. Fish and Wildlife Service

VELB - Valley elderberry longhorn beetle, a federally-listed threatened species

CHAPTER IX

HEALTH AND SAFETY

CHAPTER IX

HEALTH AND SAFETY

INTRODUCTION

A wide range of environmental hazards must be taken into account in the process of planning for urban development. Some of these hazards are natural, such as seismic shaking; some are purely man-made, such as noise; and others are natural hazards exacerbated by man, such as development in areas sensitive to erosion or liquefaction. Many of the hazards can simply be avoided in the development process through locational decisions, while other hazards can be tolerated or minimized by including mitigation measures in the planning and land use regulation process.

This chapter inventories and assesses the major hazards confronting Patterson, including seismic and geologic hazards, wildland and urban fires, flooding, and noise.

SEISMIC AND GEOLOGIC HAZARDS

The information in this section provides a preliminary indication of the degree of potential hazard or risk that may exist within various geologic or seismic zones. There are limits on the use of this information. The maps and text should be used as general guides to identifying the possible presence of geologic-related constraints; they should not be used as the sole basis for project approval or denial.

Seismic Hazards

Although there are several faults in and near Stanislaus County, the area has not experienced major seismic activity. Activity in major faults outside Stanislaus County, however, suggests that the Patterson area could be affected by future activity in those regions.

To measure the characteristics of an earthquake, the Richter Scale is used to measure the magnitude (or strength) of a quake, while the Mercalli Scale is used to measure the intensity. Table IX-1 describes the effects of the 12 levels of the Mercalli Scale. Table IX-2 compares the Richter and Mercalli scales.

TABLE IX-1

MODIFIED MERCALLI SCALE OF EARTHQUAKE INTENSITY

Scale	Effects
I.	Earthquake shaking not felt.
II.	Shaking felt by those at rest
III.	Felt by most people indoors; some can estimate duration of shaking.
IV.	Felt by most people indoors. Hanging objects swing, windows and doors rattle, wooden walls and frames creak.
V.	Felt by everyone indoors; many estimate duration of shaking. Standing autos rock. Crockery clashes, dishes rattle, and glasses clink. Doors close, open, or swing.
VI.	Felt by everyone indoors and most people outdoors. Many now estimate not only the duration of the shaking, but also its direction and have no doubt as to its cause. Sleepers awaken. Liquids disturbed, some spilled. Small unstable objects displaced. Weak plaster and weak materials crack.
VII.	Many are frightened and run outdoors. People walk unsteadily. Pictures thrown off walls, books off shelves. Dishes or glasses broken. Weak chimneys break at roofline. Plaster, loose bricks, unbraced parapets fall. Concrete irrigation ditches damaged.
VIII.	Difficult to stand. Shaking noticed by auto drivers. waves on ponds. Small slides and cave-ins along sand or gravel banks. Stucco and some masonry walls fall. Chimneys, factory stacks, towers, elevated tanks twist or fall.
IX.	General fright. People thrown to the ground. Steering of autos affected. Branches broken from trees. General damage to foundations and frame structures. Reservoirs seriously damaged. Underground pipes broken.
X.	General panic. Conspicuous cracks in ground. Most masonry and frame structures destroyed along with their foundations. Some well-built wooden structures and bridges are destroyed. Serious damage to dams, dikes, and embankments. Railroads bent slightly.
XI.	General panic. Large landslides. Water thrown out of banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flatland. General destruction of buildings. Underground pipelines completely out of service. Railroads bent greatly.
XII.	General panic. Damage nearly total, the ultimate catastrophe. Large rock masses displaced. Lines of sight and level distorted. Objects thrown into air.

Source: California Division of Mines and Geology, 1973

TABLE IX-2

APPROXIMATE RELATIONSHIPS BETWEEN
EARTHQUAKE MAGNITUDE AND INTENSITY

Richter Scale Magnitude	**Maximum Expected Intensity (MM)***	Distance Felt (kilometers)
2.0 - 2.9	I - II	0
3.0 - 3.9	II - III	15
4.0 - 4.9	IV - V	80
5.0 - 5.9	VI - VII	150
6.0 - 6.9	VII - VIII	220
7.0 - 7.9	IX - X	400
8.0 - 8.9	XI - XII	600

*Modified Mercalli Intensity Scale

Source: United States Geologic Survey, *Earthquake Intensity Zonation and Quaternary Deposits, Miscellaneous Field Studies Map 9093*, 1977.

Faults

Faults are indications of past seismic activity. It is assumed that those that have been active recently are the most likely to be active in the future, although even inactive faults may not be "dead." The recency of seismic activity is measured in geologic terms. Geologically recent is within the past two million years (the Quaternary period). All faults believed to have been active during Quaternary time are considered "potentially active." Those that have exhibited activity within the last 11,000 years are considered "active."

Figure IX-1 illustrates the general location faults in the vicinity of Patterson. Seismic activity on these faults has the greatest potential for causing damage in the Study Area. Seismic activity in other parts of the state can also affect the Study Area, but the potential impacts are not as great.

San Andreas Fault Zone

The San Andreas Fault is one of the longest, most thoroughly studied, and most active faults in the world. Some sections in the Central Coast Ranges are creeping at rates as great as 3.5 centimeters per year. Other segments, north and south of the creep areas, exhibit no detectable movement. The fault in those areas appears to be temporarily "locked." It is generally agreed that a "locked" condition allows stresses to accumulate more rapidly, thus shortening the time between major earthquakes.

There is presently movement along some of the fault's length, and numerous smaller earthquakes are recorded from the fault zone. It is generally accepted that moderate to great earthquakes will take place along the San Andreas Fault in the foreseeable future. An earthquake along this fault could cause serious

damage in Stanislaus County. The October 1989 earthquake occurred along the San Andreas Fault, with the epicenter located near Hollister.

Hayward Fault

The Hayward Fault is located east of San Francisco Bay and extends southeast to where it probably merges with the Calaveras Fault north of Hollister. A review of the recent history of this fault shows two major earthquakes (1836 and 1868), each with an estimated Richter Scale magnitude of 6.5 to 7.5. Current measurements indicate creeping at rates up to one centimeter per year in places. Numerous small earthquakes (Richter Scale magnitude of 3 to 5) have occurred along this fault in recent years.

Calaveras Fault

The Calaveras Fault borders the eastern flank of the Berkeley-Hayward Hills, and extends to the southeast. Epicenters of recent earthquakes of Richter Magnitude of 4.5 have been located along or near this fault. In 1868, an earthquake of unknown magnitude caused ground breakage near Danville. Several centimeters of creep have been measured in Hollister, where a Calaveras Fault trace cuts through a residential area.

Green Valley - Concord Faults

This fault zone, extending from Walnut Creek to west of Fairfield, has experienced displacement along most of its length within recent geologic time. An earthquake of 5.4 magnitude occurred in 1955 along part of this fault near Concord. There is currently evidence of some movement along the fault near Concord. The greatest probable earthquake generated by this fault is not expected to exceed a magnitude of 7.0 on the Richter Scale.

Midland Fault

The Midland Fault, buried under recent alluvium, extends north from Bethel Island in the Delta to east of Lake Berryessa. Its activity is not as well documented as the faults discussed previously. There is evidence, however, that fault displacement has occurred during recent geologic time. The State Division of Mines and Geology believes that the Midland Fault is a possible source of a major earthquake centered in Vacaville in 1892. The maximum probable earthquake on this fault is estimated to be 7.0 on the Richter Scale.

Patterson Pass Fault

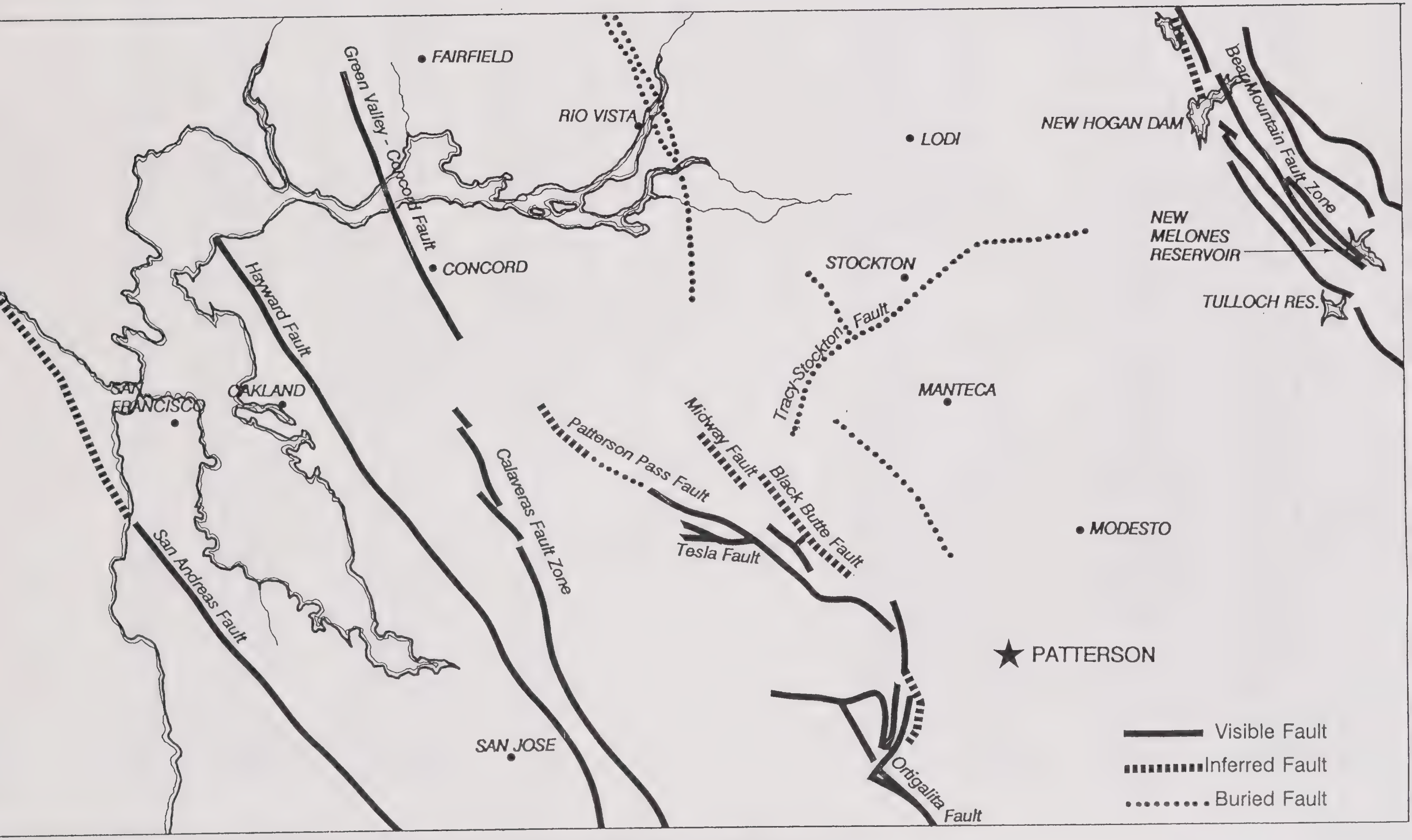
The Patterson Pass Fault runs northwest from the Alameda/San Joaquin County boundary toward Livermore. Its location is imprecise and the nature of movement, if any, is uncertain. The fault is cited because of one well-located epicenter generating a 4.5 magnitude earthquake in 1946.

Tesla - Ortigalita Faults

Within the Diablo Mountain Range, the most recent movements along this fault were approximately five million years ago, although earthquake activity without surface fracturing or faulting is still common. Active seismicity has been identified along some segments of the fault zone. A Richter magnitude 5 earthquake in 1926, a magnitude 3.7 in 1981, and smaller earthquakes monitored from 1969 to 1980 occurred in the vicinity of this fault zone. According to report produced by the California Division of

Figure IX-1

FAULTS IN THE VICINITY OF PATTERSON



Source: California Division of Mines and Geology, *Fault Map of California*, 1975.

Mines and Geology at the end of 1991, the Tesla-Ortigalita fault zone was determined to have no known damaging earthquakes. The fault zone is considered capable of generating earthquakes of Richter magnitude 6.5 to 6.75. The recurrence of earthquakes resulting in surface rupture is on the order of 5,000 to 10,000 years for the entire fault zone.

An Alquist-Priolo Special Studies Zone is located along the Ortigalita Fault in the Diablo Range and extends into Stanislaus County about seven miles at its southwest edge, however, "sufficient evidence of recent fault rupture on this segment has not been identified to warrant zoning under the Alquist-Priolo Act" (Hart 1990). The lower portion of the fault range, the Tesla Fault has been interpreted as being a remnant of an older, inactive fault system.

Groundshaking

The most serious direct earthquake hazard is the damage or collapse of buildings and other structures caused by groundshaking.

Groundshaking is the vibration which radiates from the epicenter of an earthquake. Damage to structures from groundshaking is caused by the transmission of earthquake vibrations from the ground into the structure. The intensity of the vibration or shaking and its potential impact on buildings and other urban development is determined by several factors:

- The nature of the underlying materials, including rock and soil;
- The structural characteristics of a building;
- The quality of workmanship and materials used in its construction;
- The location of the epicenter and the magnitude of the earthquake; and
- The duration and character of the ground motion.

The effects of groundshaking can be damaging well beyond the fault trace that generates the shaking. For example, the segment of the San Andreas fault which caused the great damage and destruction in San Francisco in 1906 was offshore, beyond the Golden Gate.

Most of Patterson is located on alluvium deposits of varying depths, which can increase the potential from groundshaking damage. As earthquake waves pass from more dense rock to less dense alluvial or water-saturated materials, they tend to reduce in velocity, and increase in amplitude. Ground motion lasts longer on loose, water-saturated materials than on solid rock. As a result, structures located on these types of materials suffer greater damage than those located on solid rock. "Poor ground" can be a greater hazard for structures than close proximity to the fault or epicenter.

Older buildings constructed before building codes were in effect, and even newer buildings constructed before earthquake resistance provisions were included in the current building codes, are the most likely to suffer damage in an earthquake. Most of Patterson's buildings are one or two stories high and are of wood frame construction, which is considered the most structurally resistant to earthquake damage.

Older masonry buildings without earthquake-resistant reinforcement are the most susceptible to the sort of structural failure which causes the greatest loss of lives. The susceptibility of a structure to damage

from earthquake groundshaking is also related to the foundation material underlying the structure. A foundation of rock or very firm material intensifies short period motions, which affect the low-ridged buildings more than tall, flexible ones. A deep layer of water-logged soft alluvium may cushion low-ridged buildings, but accentuate the motion in tall buildings. The amplified motion resulting from softer alluvium soils can also severely damage older masonry buildings.

Other potentially dangerous conditions include building projections which are not firmly anchored, such as parapets and cornices. These projections could collapse during periods of strong and/or sustained groundshaking.

Fire is often the major form of damage resulting from groundshaking effects. Ninety percent of the destruction in the 1906 San Francisco earthquake was caused by fire. This devastation resulted largely from the great number of buildings constructed of combustible materials, damage to much of the city's firefighting facilities, and the rupture of water mains.

Most earthquake-induced fires start because of ruptured power lines, damage to wood, gas, or electrical stoves, and damage to other gas or electrical equipment. This points out the need for greater emphasis on non-combustible material and on special construction techniques so that water mains will remain unbroken during large earthquakes. Critical facilities, such as hospitals and fire stations, should be sited, designed, and constructed to withstand severe groundshaking.

Ground Failure

In addition to structural damage caused by groundshaking, there are other ground effects caused by the shaking. These are known as ground failure effects and include liquefaction, settlement, lateral spreading, lurch cracking, and earthquake induced landslides.

Liquefaction is the loss of soil strength due to seismic forces acting on water-saturated granular soils. This loss of strength leads to a "quicksand" condition which causes many types of ground failure. When the liquefied granular layer occurs at the surface, objects can either sink or float depending on their density. The evaluation of potential for liquefaction is complex and must consider soil type, soil density, groundwater table, and the duration and intensity of shaking. Liquefaction is most likely to occur in deposits of weak saturated alluvium or similar deposits of artificial fill.

Liquefaction potential within Patterson exists in low-lying areas composed of unconsolidated, saturated, clay-free sands and silts.

Patterson is theoretically subject to liquefaction resulting from earthquakes on several faults. The expected degree of earthquake-caused shaking is, however, relatively low, and it is unlikely that significant liquefaction would occur. Further study is needed to identify specific areas within the city limits that are susceptible to liquefaction.

Settlement is the compaction of soils and alluvium caused by groundshaking. It occurs irregularly and may be partly controlled by bedrock surfaces, and old lake, slough, swamp, and stream beds. The amount of compaction may range from a few inches to several feet. Irregular compaction is most widespread and extreme in major earthquakes. It may occur as much as 75 to 80 miles from the epicenter and may amount to several feet even at that distance. Compaction is most likely to occur in areas, such as Patterson, which are underlain by soft water-saturated low density alluvial material.

Lurch cracking refers to fractures, cracks, and fissures produced by groundshaking, settling, compaction of soil, and sliding and may occur many miles from the epicenter of an earthquake. These effects are characteristic of earthquakes large enough for significant ground motion to occur. The larger the earthquake magnitude, the more extensive the effects. Thus, a major earthquake may damage streets, curbs, sewer, gas, and water lines.

Lateral spreading is the horizontal movement or spreading of soil toward an open face such as a stream bank, the open side of fill embankments, or the sides of levees. Artificial fill areas which are improperly engineered or which have steep, unstable banks are most likely to be affected.

The potential for lurch cracking and lateral spreading is highest in areas where there is a high groundwater table, relatively soft and recent alluvium deposits, and where creek banks are relatively high. Fracture patterns from lurch cracking and lateral spreading may be controlled by the configuration of shallow bedrock structures, by highway surfacing, by the margins of fill, and engineering structures.

Earthquakes can also cause landsliding and slumping. Patterson is mostly level, so landsliding and slumping should not be problems, except in the Diablo Mountains west of Interstate 5, which are prone to landsliding.

Seiches

Seiches are earthquake-generated waves within enclosed or restricted bodies of water. Major, and even moderate earthquakes, miles away from Patterson can produce oscillations or waves in local bodies of water which could overtop and damage levees and cause water to inundate surrounding areas.

The bodies of water most susceptible to seiches in or near Patterson are the San Joaquin River, California Aqueduct, and the Delta-Mendota Canal. The danger of seiches during seismic events is limited to those periods when the river and canals are full during the flood season. Overtopping of levees during this period could cause a limited amount of flooding.

<u>Assessment of Potential Seismic Hazards</u>

The California Division of Mines and Geology has produced a maximum expected earthquake intensity map which shows Patterson in the moderate severity zone. The moderate zone classification indicates that Patterson would experience a maximum shaking intensity of VII to VIII on the Modified Mercalli Scale, causing general alarm and moderate damage.

Landslide and Erosion Hazards

Historically, a number of major slides have occurred throughout the Diablo Range in Stanislaus County. The steep slopes and unstable geology of the area presents a limitation to building, and the hazards would be exacerbated by earthquakes. Because most of Patterson is level, landslides are not a problem except for potential slumping along the levees.

According to the U.S. Soil Conservation Service, the erosion hazard exhibited by surface soils is considered low. The essentially level topography of the Patterson area means that erosion will not present a significant problem.

Soils

The type of soils present determines the susceptibility of certain land areas to erosion and ground failure. Patterson's are generally considered to have none to slight erosion hazards, poor permeability, high to moderate shrink-swell capacities and high water retention capabilities.

All soils have certain engineering properties and characteristics such as erosion potential, shrink-swell behavior, and permeability, which determine their suitability and constraints for building sites, loads, grading, and drainage systems. The soils in Patterson have been mapped by the Soil Conservation Service. Chapter VIII, Natural Resources, contains a map of the soils in Patterson and a description of their characteristics.

Volcanic Hazards

The products of volcanic eruptions cause damage by their heat or by covering the landscape with their deposits. A volcanic eruption can take human lives, destroy buildings, destroy or pollute water supply systems, and convert productive farmland to sterile, rocky landscapes. The most probable centers for future volcanic eruptions are distant from Patterson, along the eastern margin of the Sierra Nevada.

Land Subsidence

Subsidence of the land surface can result from extraction of groundwater, gas, oil, and geothermal energy. Hydrocompaction, peat oxidation, and fault rupture are also potential causes of subsidence. Groundwater withdrawal subsidence is the most extensive type in California. This type of subsidence has been observed only in valley areas underlain by alluvium.

Subsidence can cause a change in gradients affecting the carrying capacities of canals, drains, and sewers. Compaction of sediments at depth has caused extensive damage to water wells in areas where subsidence has been substantial. The magnitude of subsidence depends primarily on the following five factors:

- The magnitude of water level decline.
- The thickness of the alluvium tapped by wells.
- The individual and combined thicknesses and compressibilities of the silt and clay layers within vertical sections tapped by wells.
- The lengths of time during which water level declines are maintained.
- The number of occurrences of heavy withdrawals of water in any single area.

Patterson is within the San Joaquin groundwater basin. This basin has been identified by the California Department of Water Resources as experiencing overdraft. The Patterson area experienced some overdraft during the 1976-77 drought. Wells are now monitored by the U.S. Soil Conservation Service to identify potential overdraft problems.

Water Pollution

The city's potable water is supplied by wells. The local groundwater is of generally good quality, and consistently meets federal drinking water standards. The city has had to chlorinate its water on a few occasions when new water hookups led to increased salinity in the water.

Water quality in the San Joaquin River and the irrigation canals is degraded by runoff and discharges into the San Joaquin River. The river's water quality is discussed in Chapter VIII, "Natural Resources."

FLOODING HAZARDS

Flooding in Patterson could result from the 100-year flood, localized flooding, and dam and levee failure. Stanislaus County has a general history of flooding. Flooding occurred along the San Joaquin River in 1983.

The primary effects of flooding are caused by the initial force of flood waters which can shatter structures and uplift vehicles. Floodwaters can carry large objects downstream which have the force to remove stationary structures. Saturation of materials and earth can cause instability, collapse, and damage. Objects can be buried through sediment deposition. Floods can cause drowning or isolation of persons and animals. Floodwaters can break utility lines, interrupting services and potentially affecting health and safety, particularly in the case of broken sewer or gas lines.

The secondary effects of flooding area are due to standing water. Standing water can result in loss of crops, septic tank failure, and water well contamination. Standing water can also damage roads, foundations, and electrical circuits.

The 100-Year Flood Hazard

A 100-year flood has a one percent probability of occurring in any year. This is considered to be a severe flood, but one with a reasonable possibility of occurrence for purposes of land use planning, property protection, and human safety. The Federal Emergency Management Agency (FEMA) prepares maps showing areas which are likely to flood during a 100-Year flood event. FEMA revised its maps for the unincorporated Study Area in August 1988. Portions of the Study Area within the 100-year floodplain as defined by FEMA's prelimanary map released in August 1988 are depicted in Figure IX-2.

As shown in Figure IX-2, the primary areas of the Study Area which would flood during a 100-year event are in the northwest region due to Del Puerto Creek, north of Walnut Avenue due to flooding from Salado Creek, and the area surrounding the San Joaquin River.

Salado Creek

Salado Creek originates in the Diablo Mountains south of Patterson. The creek flows through an earth channel from the west until it reaches Highway 33, where the natural creek was filled in and replaced with a 36-inch pipe. During heavy storms, Salado Creek does not have adequate capacity to carry upstream storm water runoff through the city.

During heavy storms, Salado Creek backs up and spills over its banks near the railroad culvert, causing flooding in areas east of Highway 33 and north of Walnut Avenue. The most severe flood occurred in

1958. Flooding from Salado Creek also damaged local farm land during 1983 and 1986. The City and County have committed funds for the U.S. Army Corps of Engineers to conduct a feasibility study to identify possible solutions to Salado Creek flooding.

Dam Failure Flood Hazard

The risk of dam failure is remote. Dam failure can occur under three general conditions: earthquake, structural instability, and intense rainfall in excess of a dam's holding capacity. According to the Stanislaus County General Plan, Patterson in not within the inundation areas for Don Pedro Reservoir, New Melones Dam, or Tulloch Dam.

FIRE HAZARDS

Both structural and wildland fire hazards threaten life and property within Patterson. Wildland fires resulting from both man-made and natural causes occur in forest, brush, or grasslands, primarily in sparsely developed or existing open space lands. Structures and urban development may also be threatened or destroyed in the area of wildland fires. Structural fires usually result from man-made causes and threaten many residential and commercial structures, especially those built before building and fire codes were established. These substandard structures represent the highest potential for injury, death, or loss of property.

Structural Fire Hazards

Structural fire hazards are primarily associated with residential, commercial, and industrial structures and activities. Urban fires can start for a wide variety of reasons, including electrical shorts, industrial accidents, carelessness, and arson. In general, however, fire hazards are greatest in buildings and structures which are old or substandard. Older structures in Patterson are generally in the original neighborhoods and in some other areas.

Fire hazards are also the result of inadequate water flows in some of the older areas of the city served by undersized mains. The primary areas of concern are the downtown circle and the strip along First Street. The City is planning on upgrading water mains to serve the areas outlying the circle.

Wildland Fire Hazards

The outbreak and spread of wildland fires in the Study Area is a potential danger, particularly during the summer months. The buildup of understory brush which under natural conditions would be periodically burned off creates conditions conducive to larger and more intensive fires. Variable conditions such as humidity, drought, rainfall, wind velocity, type and presence of vegetation, and fuel buildup are the main determinants to the start, spread, and control of wildland fires. The annual drought season (May to October) gives rise to the most hazardous fire conditions, especially in the latter months. It should be noted that most wildland fires in California are the result of either arson or simple human carelessness.

Portions of the Study Area most susceptible to wildland fires are the dense brush along the river, and brush in the western portion of the Study Area west of Interstate 5. The California Department of Forestry rates these as having a high critical fire hazard. Figure IX-3 indicates the general areas of structural and wildland fire hazards.

Figure IX-2

100-YEAR FLOODPLAIN

N

Patterson Planning Area

Source: Federal Emergency Management Administration: City of Patterson, November 1981; Stanislaus County Unincorporated Area, August 1988.

Figure IX-3

FIRE HAZARD AREAS

Structural Fire Hazard Areas

Wildland Fire Hazard Areas

● Sites Storing Hazardous Materials

Source: City of Patterson Fire Department, 1988.

Scale in Feet

Base Map prepared by Lew Garcia Davis July 1988

N

Patterson Planning Area

TOXIC/HAZARDOUS MATERIALS

Patterson has some industries and activities which transport, store, or use toxic or hazardous chemicals, posing potential safety hazards. The most prevalent hazardous materials in Patterson are stored pesticides and herbicides. The County Agricultural Office on First Street is listed as a hazardous waste facility because it is used as a temporary storage facility for hazardous waste. The waste is moved to a permanent disposal facility when sufficient quantities have accumulated to make movement effective. Figure IX-3 shows the locations of sites storing hazardous materials.

AIRCRAFT CRASH HAZARDS

Crop dusting planes from Patterson Airport fly over the Study Area. In addition, military planes fly over the area from the Crows Landing Naval Auxiliary Landing Field. Any crash landing of an aircraft is a potentially disastrous hazard. Any aircraft crash could create an accessibility hazard for rescue crews. Unintentional fuel dumps over populated areas would also pose a significant hazard.

EMERGENCY RESPONSE

Emergency response organization and responsibilities in Patterson are governed by the City's Emergency Response Plan, adopted in 1990. The plan outlines emergency response procedures and evacuation routes.

NOISE

Noise is often defined simply as unwanted sound, and thus is a subjective reaction to characteristics of a physical phenomenon. Researchers for many years have grappled with the problem of translating objective measurements of sound into directly correlatable measures of public reaction to noise. The descriptors of community noise in current use are the results of these efforts and represent simplified, practical, measurement tools to gauge community response.

Noise has often been cited as a health problem, not so much in terms of actual physiological damage, such as hearing impairment, but more in terms of reducing general well-being and contributing to undue stress and annoyance. Interference with human activities such as sleep, speech, recreation, and tasks demanding concentration or coordination, are the principal cause of noise-induced health problems and stress.

As part of the state-mandated noise element, state law and guidelines prepared by the State Office of Noise Control (ONC) require that certain noise sources and areas containing noise-sensitive land uses be identified and quantified by preparing generalized noise exposure contours for current and projected conditions within a community. Noise contours may be prepared in terms of the community noise equivalent level (CNEL) or day-night average level (Ldn), both of which are descriptors of total noise exposure at a given location for an annual average day. This noise exposure information may be used as a guide for establishing a pattern of land uses that minimizes the exposure of community residents to excessive noise.

The ONC guidelines require that the following major noise sources be considered in preparing a noise element:

- Highways and freeways.
- Primary arterials and major local streets.
- Passenger and freight on-line railroad operations and ground rapid transit systems.
- Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation.
- Local industrial plants, including, but not limited to, railroad classification yards.
- Other ground stationary noise sources identified by local agencies as contributing to the community noise environment.

Based on discussions with City of Patterson staff regarding potential major noise sources, it was determined that there are several potentially significant primary sources of community noise within Patterson. These sources include traffic on major roadways and highways, railroad operations, and industrial activities.

Analytical noise modeling techniques and noise measurements were used to develop generalized Ldn noise contours for the major roadways, railroads and industrial noise sources in the City of Patterson for existing (1988) conditions.

Roadways

The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to develop Ldn contours for Highway 33 and major roadways in Patterson. The FHWA Model is the analytical method presently favored for traffic noise prediction by most state and local agencies, including Caltrans. The FHWA Model is based upon reference energy emission levels for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver and the acoustical characteristics of the site.

The FHWA Model was developed to predict hourly Leq values for free-flowing traffic conditions, and is generally considered to be accurate within 1.5 dB. To predict Ldn values it is necessary to determine the hourly distribution of traffic for a typical 24-hour day and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Traffic data representing annual average traffic volumes were obtained from Caltrans and the City of Patterson. The day/night distribution of traffic and the truck mix was based upon Caltrans file data and estimates by Brown-Buntin Associates, noise consultants for the General Plan. Using the traffic data and the FHWA methodology, traffic noise levels as defined by Ldn were calculated for existing traffic volumes. Distances from the center of the roadway to Ldn contour values of 60 and 65 dB are summarized in Table IX-3 and illustrated in Figure IX-4.

City of Patterson

FIGURE IX-4

EXISTING TRAFFIC NOISE CONTOURS

: Area within 60 dB L_{dn} Contour

Source: Brown-Buntin Associates, 1990

TABLE IX-3
NOISE CONTOUR DATA
DISTANCE (FEET) FROM CENTER OF ROADWAY TO Ldn CONTOURS

Segment Nos.	Description	Current 60 dB
Highway 33:		
1	Eucalyptus to Walnut	121
2	Walnut to Las Palmas	127
3	Las Palmas to Sperry	163
4	Sperry to south of town	126
First Street:		
5	Walnut to Washburn	45
6	Washburn to Las Palmas	65
7	Las Palmas to E Street	39
8	E Street to Sperry	43
Las Palmas:		
9	East of town to First Street	101
10	First Street to Highway 33	130
11	Highway 33 to Plaza	72
12	Plaza to 9th Street	45
13	9th Street to Ward	9
Ward Street:		
14	Highway 33 to Salado Creek	37
15	Salado Creek to 9th Street	61
16	9th Street to Sperry	28
17	Sperry to Baltch	49
Sperry Avenue:		
18	First Street to Highway 33	34
19	Highway 33 to Del Puerto	46
20	Del Puerto to 9th Street	43
21	9th Street to west of town	64
E Street:		
22	First Street to 9th Street	45

Continued on next page

TABLE IX-3 (Continued)
NOISE CONTOUR DATA
DISTANCE (FEET) FROM CENTER OF ROADWAY
TO Ldn CONTOURS

Segment Nos.	Description	Current 60 dB
Del Puerto:		
23	Plaza to Sperry	49
24	Sperry to Poppy	40
Salado Avenue:		
25	Plaza to 7th Street	60
26	7th Street to Ward	49
9th Street:		
27	Ward to Sperry	44

Source: Brown-Buntin Associates, July 1988.

It should be noted that since calculations did not take into consideration shielding caused by local buildings or topographical features, the distances reported in Table IX-3 should be considered as worst-case estimates of noise exposure along roadways in the community.

Railroads

Railroad operations in Patterson include Southern Pacific Transportation Company freight activity on the north-south Highway 33 line. Railroad operations data obtained from Southern Pacific indicate the traffic volume on the branch line in Patterson is approximately one to two trains per day on an unscheduled basis randomly distributed through the daytime hours. Train speeds in Patterson are generally 25 to 35 miles per hour.

Due to relatively infrequent operations on the branchline, noise exposure exceeding 60 dB Ldn is confined to the railroad right-of-way, although the use of the horn at grade crossings would be expected to result in significant short-term impacts for persons located near the tracks.

Industrial Facilities

The production of noise is an inherent part of many industrial processes, even when the best available noise control technology is applied. Noise production within an industrial facility is controlled indirectly by Federal and State employee health and safety regulations (OSHA and CalOSHA), but exterior noise emissions from industrial operations have the potential to exceed locally acceptable standards at noise sensitive land uses.

Industrial noise control issues focus upon two objectives: to prevent the introduction of new noise-producing uses in a noise sensitive area, and to prevent encroachment of noise sensitive uses upon existing industrial facilities. The first objective can be achieved by applying performance standards to proposed new industrial uses. The second objective can be met by requiring that new noise sensitive uses in proximity to existing industrial facilities include mitigation measures to ensure compliance with the same performance standards.

The following descriptions of existing industrial noise sources in Patterson are intended to be representative of the relative noise impacts of such uses, and to identify specific noise sources which should be considered in the review of development proposals in their environs. The locations of these noise sources are shown by Figure IX-5.

<u>Patterson Frozen Foods, Inc.</u>
100 W. Las Palmas Avenue

Operations at Patterson Frozen Foods consist of packaging and freezing of vegetables. Significant noise sources at the frozen foods plant include compressors, pumps, fans, packaging equipment and cooling towers. Heavy trucks and forklifts are also used extensively at Patterson Frozen Foods. The plant is reported to operate 24 hours per day/12 months per year with a decrease in operations in January for equipment overhauls and maintenance. Fan and cooling tower operations were observed to be the most prevalent noise sources in the community near the plant. Nighttime noise measurements of Patterson Frozen Foods operations were conducted at five locations surrounding the plant on March 29, 1988. The results of these measurements are presented in Table IX-4 and the location of the 50 dBA L50 contour for Patterson Frozen Foods operations is shown in Figure IX-5.

TABLE IX-4

MEASURED NIGHTTIME NOISE LEVELS
Patterson Frozen Foods
March 29, 1988

Location	Leq, dBA
1st and Las Palmas Avenue	60.5
1st and Orange Avenue	54.5
Locust Avenue and Orange Avenue	53.5
Sperry at Railroad Tracks	52.0
Las Palmas Avenue between 2nd and 3rd	58.0

<u>Designed Mobile Systems Industries</u>
800 South Highway 33

Designed Mobile Systems Industries (DMSI) manufactures commercial modular buildings. Typical hours of operation are 7:00 a.m. to 3:30 p.m. with occasional increases in operations to meet demand. Potentially significant noise sources associated with plant operation include welding, grinding, pneumatic

nail guns and some fork lift and truck activity. Operations are generally contained within a manufacturing shed and no appreciable noise events were observed by Brown-Buntin Associates during a site visit. Future expansion has been planned for DMSI which could result in increased noise levels in the project vicinity. An acoustical analysis may be warranted for new noise sensitive development adjacent to DMSI.

Pacific Tomato Growers
525 Sperry Avenue

Operations at the Pacific Tomato Growers plant consist of the packaging and distribution of tomatoes and tomato products. Operations at this plant are seasonal from August through November. The plant typically operates from 6 a.m. to 8 p.m. during this season. Potentially significant noise sources at this plant include conveyors, dryers, compressors, packaging equipment and heavy truck operations. It is reported that approximately 40 truck operations occur between 6 a.m. to 12 noon. Noise measurements of the tomato plant were not performed due to production being completed prior to the noise survey. An acoustical analysis of the Pacific Growers Plant in full operation should be required prior to the development of noise sensitive uses near the facility to ensure compliance with the noise element performance standards.

Hancor Inc.
401 First Street

Hancor Inc. operates a plastic drainage pipe manufacturing plant. The facility operates 6 days per week on a 24-hour basis. Noise producing activities at the plant include a vacuum system for unloading rail cars, mixing tools, a shredder and random heavy truck and forklift activities. Mixing and shredding operations are performed inside a steel warehouse. Average noise levels of 55-56 dBA were measured at the nearest residence during daytime hours. A level of 51 dBA was measured at the same location during nighttime hours. Figure IX-5 shows the approximate location of the 50 dBA L50 contour for typical plant operations.

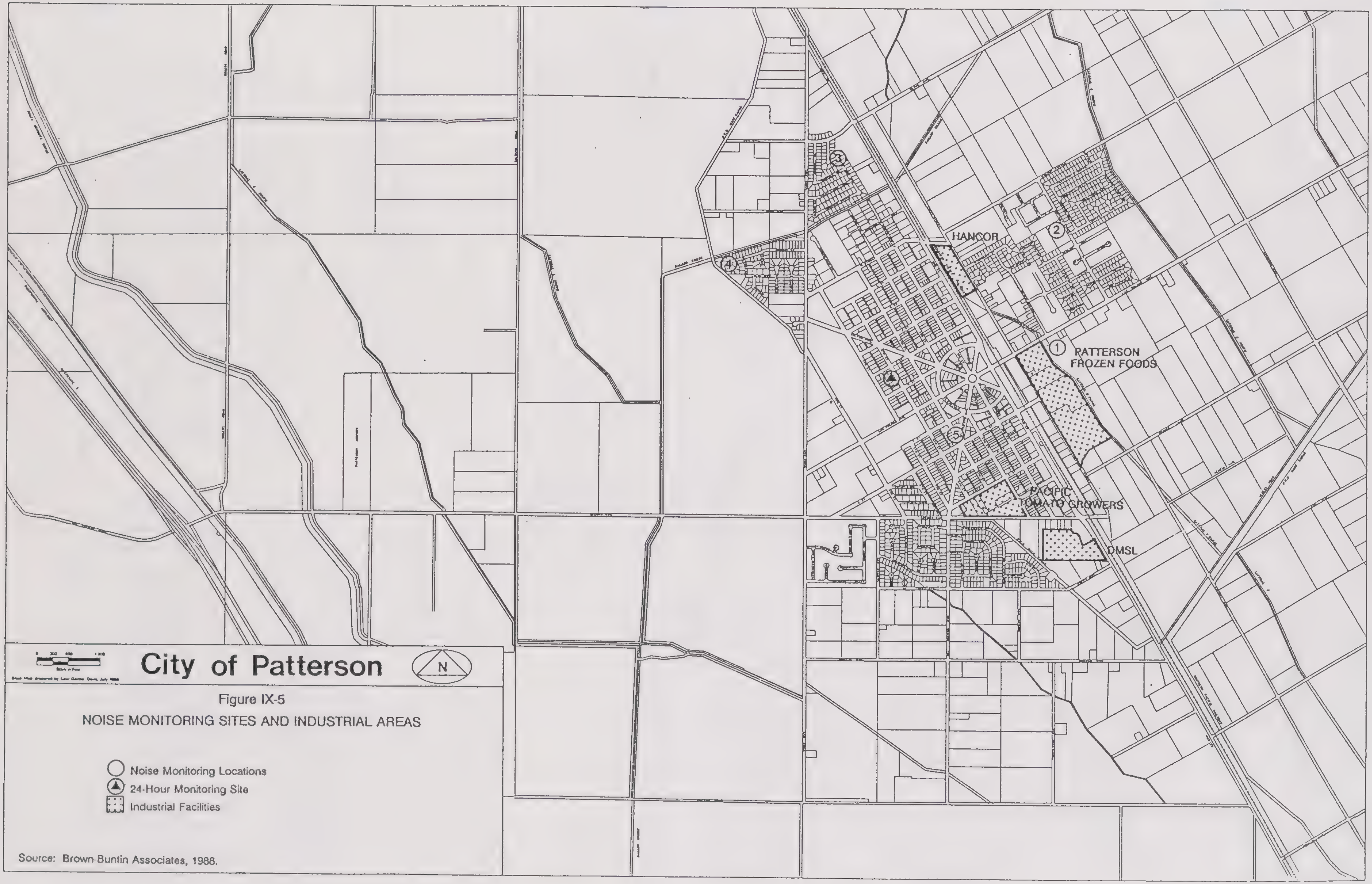
Community Noise Survey

A community noise survey was conducted to document noise exposure in areas of the community containing noise sensitive land uses. The following noise sensitive land uses were identified within the City of Patterson:

- All residential uses
- Schools
- Del Puerto Hospital

Noise monitoring sites were selected as representative of typical conditions in areas of the community where such uses are located. Short-term noise monitoring was conducted during three periods of the day and night on March 29, 1988, so that reasonable estimates of Ldn could be prepared. One long-term noise monitoring site was established to record day-night statistical trends during the same period.

The locations, measured noise levels, and estimated Ldn values for each of the seven noise monitoring sites are summarized in Table IX-5. The monitoring sites are depicted on a map of the city in Figure IX-5. Figure IX-6 describes the compatability of general categories of land uses for community noise exposure.



City of Patterson

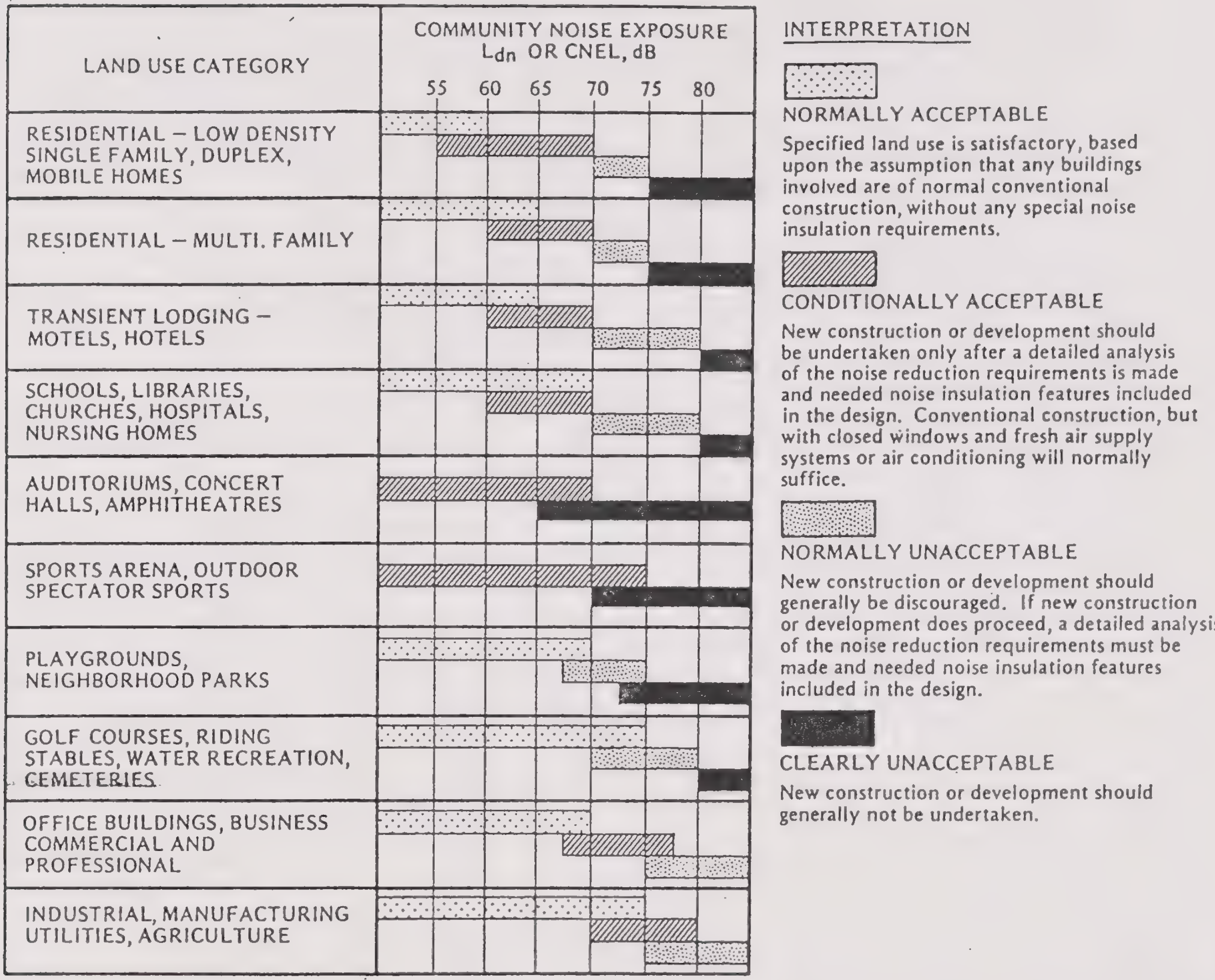
Figure IX-5

NOISE MONITORING SITES AND INDUSTRIAL AREAS

Source: Brown-Buntin Associates, 1988.

Figure IX-6

LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENTS



CONSIDERATIONS IN DETERMINATION OF NOISE–COMPATIBLE LAND USE

A. NORMALIZED NOISE EXPOSURE INFORMATION DESIRED

Where sufficient data exists, evaluate land use suitability with respect to a "normalized" value of CNEL or L_{dn}. Normalized values are obtained by adding or subtracting the constants described in Table 1 to the measured or calculated value of CNEL or L_{dn}.

B. NOISE SOURCE CHARACTERISTICS

The land use-noise compatibility recommendations should be viewed in relation to the specific source of the noise. For example, aircraft and railroad noise is normally made up of higher single noise events than auto traffic but occurs less frequently. Therefore, different sources yielding the same composite noise exposure do not necessarily create the same noise environment. The State Aeronautics Act uses 65 dB CNEL as the criterion which airports must eventually meet to protect existing residential communities from unacceptable exposure to aircraft noise. In order to facilitate the purposes of the Act, one of which is to encourage land uses compatible with the 65 dB CNEL criterion wherever possible, and in order to facilitate the ability of airports to comply with the Act, residential uses located in Community Noise Exposure Areas greater than 65 dB should be discouraged and considered located within normally unacceptable areas.

C. SUITABLE INTERIOR ENVIRONMENTS

One objective of locating residential units relative to a known noise source is to maintain a suitable interior noise environment at no greater than 45 dB CNEL of L_{dn}. This requirement, coupled with the measured or calculated noise reduction performance of the type of structure under consideration, should govern the minimum acceptable distance to a noise source.

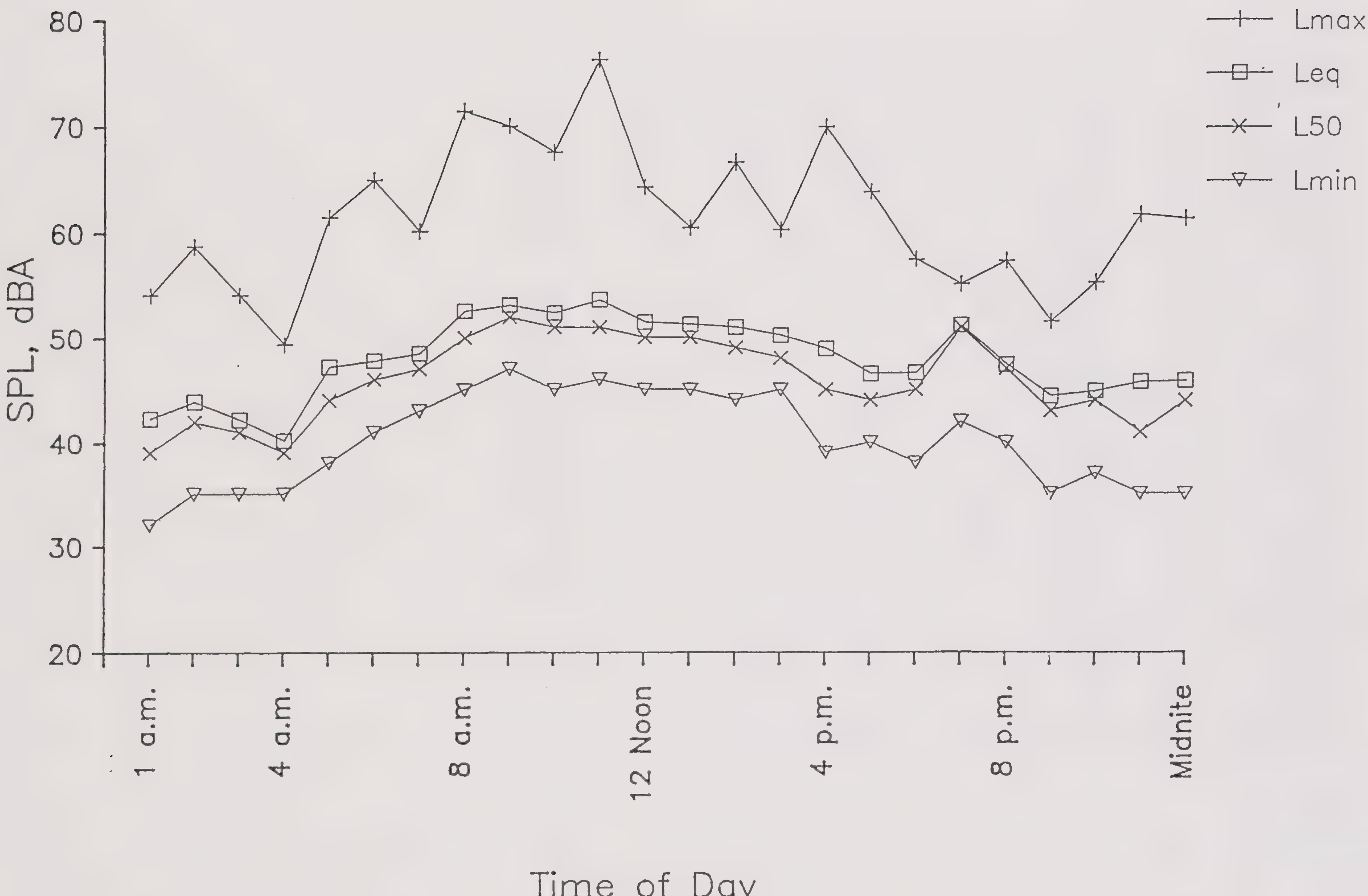
D. ACCEPTABLE OUTDOOR ENVIRONMENTS

Another consideration, which in some communities is an overriding factor, is the desire for an acceptable outdoor noise environment. When this is the case, more restrictive standards for land use compatibility, typically below the maximum considered "normally acceptable" for that land use category, may be appropriate.

Source: California Office of Noise Control

Figure IX-7

AMBIENT NOISE LEVELS
108 North Sixth Street
March 29-30, 1988



Source: Brown-Buntin Associates, 1988.

The community noise survey results indicate that typical noise levels in noise sensitive areas of Patterson are in the range of 50 dB to 60 dB Ldn. Noise from traffic on roadways and industrial sources is the controlling factor for background noise levels in the City. In general, the areas of Patterson which contain noise sensitive uses are relatively quiet except near major roadways, the railroad tracks and industrial areas.

TABLE IX-5

SUMMARY OF MEASURED NOISE LEVELS AND ESTIMATED DAY-NIGHT AVERAGE LEVELS (Ldn) IN AREAS CONTAINING NOISE SENSITIVE LAND USES

		Level, dBA			Est.
Site#	**Description**	**Ld[1]**	**Ld[2]**	**Ln**	**Ldn**
1	Enrique & El Camino	56.2	51.5	48.8	56.6
2	Felipe Garza Park	65.0	52.2	39.1	60.3
3	310 Arambel Park	48.0	49.3	38.9	48.8
4	320 Barros Crt.	55.1	50.4	39.5	52.3
5	5th & Del Puerto	57.0	56.7	48.4	57.5
6	Nicastro & Darpino Crt	52.0	--	42.9	52.4
7	108 No. 6th Street	50.7	--	45.1	52.9

* = long-term monitoring site
Ld = Leq during daytime hours (7 a.m. to 10 p.m.)
Ln = Leq during nighttime hours (10 p.m. to 7 a.m.)

Figure IX-7 illustrates ambient noise levels at the long-term monitoring site over a typical 24-hour weekday. Leq values recorded at 108 North 6th Street reflect noise from the adjacent school in the morning and local traffic.

FINDINGS

- Patterson has not experienced a great degree of seismic activity. The primary seismic hazards in Patterson are related to groundshaking and soil liquefaction.

- The California Division of Mines and Geology estimates that Patterson could experience an earthquake with a maximum shaking intensity of VII to VIII on the modified Mercalli Scale, causing general alarm and moderate damage.

- The steep slopes and unstable geology of the Diablo Mountains on the western edge of the study present potential landsliding hazards.

- The San Joaquin River 100-year floodplain has been mapped for the Study Area by the Federal Emergency Management Administration. Flooding has also occurred periodically around Patterson as a result of Salado Creek. The City and County have committed funds for a U.S. Army Corp of Engineers' feasibility study to identify solutions to the problem.

- Both structural and wildland fire hazards exist within the Study Area. The greatest risks of wildland fires are in the brush west of I-5 and in the riparian shrubs along the San Joaquin River. The greatest structural fire hazards are from older and substandard structures in the older parts of the city.

- The primary sources of noise in Patterson are traffic on major roadways and highways, railroad operations, and industrial activities.

- In general, the areas of Patterson which contain noise sensitive uses are relatively quiet except near major roadways, the railroad tracks, and industrial areas.

BIBLIOGRAPHY

Areas Damaged by California Earthquakes, 1900-1949, California Division of Mines and Geology, 1982.

City of Patterson, *General Plan*, 1978.

City of Patterson, *General Plan Update Preliminary Environmental Impact Report*, 1985.

Stanislaus Area Association of Governments, *Environmental Resources Management Element -Geology and Seismic Safety*, June 1978.

Stanislaus County, *General Plan*, June 1987.

Stanislaus County, *General Plan Support Documents, 1987.*

Stanislaus County Department of Public Works, *Flood Management Study of Salado Creek*, Prepared by Camp Dresser & McKee Inc., December 1982.

PERSONS CONSULTED

Babcock, Gerald, Patterson Frozen Foods, Inc.

Barnes, C.A., Designed Mobile Systems, Inc.

Bonds, Zack, Pacific Tomato Growers

Chief Dispatcher's Office, Southern Pacific Transportation Company, Fresno and Tracy

Gaiser, Dick, Fire Chief, Patterson Fire Department

Lopez, Ignacio, Public Works Director, City of Patterson

Whitman, Trenton, Hancor, Inc.

GLOSSARY

Active Fault - A fault that has moved recently and which is likely to move again. For planning purposes, "active fault" is usually defined as one that shows movement within the last 11,000 years and can be expected to move within the next 100 years.

Alluvial - Pertaining to or composed of alluvium, or deposited by a stream or running water.

Alluvium - A general term for clay, silt, sand, gravel, or similar unconsolidated detrital material deposited during comparatively recent geologic time by a stream or other body of running water as a sorted or semi-sorted sediment in the bed of the stream or on its flood plain or delta, or as a cone or fan at the base of a mountain slope.

Ambient Noise Level - The composite of noise from all sources. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Beds; Bedding - Layers in sedimentary rocks distinguished from one another on the basis of rock type, grain size, composition, color, etc.

CNEL - Community Noise Equivalent Level. The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five decibels to sound levels in the evening from 7:00 p.m. to 10:00 a.m. and after addition of ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.

Compaction - Reduction in bulk volume or thickness of, or the pore space within, a body of fine-grained sediments in response to the increasing weight of overlying material that is continually being deposited, or to the pressure resulting from earth movements within the crust. It is expressed as a decrease in porosity brought about by a tighter packing of the sediment particles.

Consolidated Material - Soil or rocks that have become firm as a result of compaction.

Decibel, (dB) - A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).

Earthquake - Perceptible trembling to violent shaking of the ground, produced by sudden displacement of rocks below and at the earth's surface.

Epicenter - An area of the surface of the earth directly above the focus of an earthquake.

Equivalent Energy Level (L_{eq}) - The sound level corresponding to a steady state sound level containing the same total energy as a time varying signal over a given sample period. L_{eq} is typically computed over 1, 8, and 24-hour sample periods.

Erosion - Movement of material (such as soil) from one place to another on the earth's surface. Agents of movement include water, ice, wind, and gravity.

Fault - A fracture in the earth's crust forming a boundary between rock masses that have shifted.

Fault System - Two or more interconnecting fault sets.

Fault Trace - The intersection of a fault with the earth's surface.

Fault Zone - A zone in which surface disruption or rock fracture has occurred due to movement along a fault. A fault zone may be expressed as an area with numerous small fractures, breccia (essentially, fractured rock) as a fault gouge. A fault zone may be anywhere from a few meters (or yards) to two or more kilometers (1 mile or more) wide.

Fire Hazard Zone - An area where, due to slope, fuel, weather, or other fire-related conditions, the potential loss of life and property from a fire necessitates special fire protection measures and planning before development occurs.

Ground Failure - Mudslide, landslide, liquefaction, or the seismic compaction of soils.

Hazardous Material - An injurious substance, including pesticides, herbicides, toxic metals and chemicals, liquified natural gas, explosives, volatile chemicals, and nuclear fuels.

Inactive Fault - A fault which shows no evidence of movement in recent geologic time and no potential for movement in the relatively near future.

Intensity (of an earthquake) - A measure of the effects of earthquake waves on man, structures, and the earth's surface at a particular place. The intensity at a specific point depends not only upon the strength of the earthquake, or the earthquake magnitude, but also upon the distance from the point to the epicenter and the local geology. Intensity may be contrasted with magnitude, which is a measure of the total energy released by an earthquake.

Landslide - A general term for relatively rapid mass movement, such as slump, rock slide, debris slide, mudflow, and earthflow.

Lateral Spreading - The movement of loose soils over horizontal or low-angle slopes into open areas, caused by ground motion during an earthquake.

L_{dn} - Day/Night Average Level - The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m. (Note: CNEL and L_{dn} represent daily levels of noise exposure averaged on an annual basis, while L_{eq} represents the equivalent energy noise exposure for a shorter time period, typically one hour.)

Liquefaction - A process by which water-saturated granular soils transform from a solid to a liquid state because of a sudden shock or strain.

Lurch Cracking - The development of all types and sizes of fissures in the ground, due to ground motion during an earthquake.

Magnitude (Earthquake) - A measure of the strength of an earthquake or the strain energy released by it, as determined by seismographic observations. As defined by Richter, it is the logarithm, to the base 10, of the amplitude in microns of the largest trace deflection that would be observed on a standard torsion seismograph at a distance of 100 kilometers from the epicenter.

Noise Exposure Contours - Lines drawn about a noise source indicating constant energy levels of noise exposure. CNEL and L_{dn} are the descriptors utilized herein to describe community exposure to noise.

Potentially Active Fault - (1) A fault that moved within the Quaternary Period before the Holocene Epoch (the last 2,000,000 to 11,000 years); (2) A fault which, because it is judged to be capable of ground rupture or shaking, poses an unacceptable risk for a proposed structure.

Seiche - An earthquake-induced wave in a lake, reservoir, river, or harbor.

Seismic - Pertaining to earthquakes.

Settlement - The downward movement of soils, and structures on them or in them, resulting from reduction in the voids in the underlying soils.

Shear - A kind of fracture (or fault) in rock produced by intense pressure.

Subsidence - The gradual, local settling or sinking of the earth's surface with little or no horizontal motion. (Subsidence is usually the result of gas, oil, or water extraction, hydrocompaction, or peak oxidation, and not the result of a landslide or slope failure.)

Surface Rupture - A break in the ground's surface and associated deformation resulting from the movement of a fault.

Water Table - The upper surface of saturated earth material below which all the materials are saturated.

Wildland - A nonurban, natural area which contains uncultivated land, timber, range, watershed, brush, or grasslands.

CHAPTER X

SCENIC RESOURCES AND URBAN DESIGN

CHAPTER X

SCENIC RESOURCES AND URBAN DESIGN

INTRODUCTION

This chapter describes the structure and appearance of Patterson's environment: both natural and man-made elements. The high visual quality of the rural landscapes and trees and the generally cohesive urban pattern are the major scenic resources in Patterson.

This chapter describes the scenic resources and urban pattern in the Study Area, analyzes the scenic resources and urban design elements of the Study Area by dividing it into six distinct areas, and evaluates the major roadways and entrances to the city.

SETTING

Patterson is located in California's Great Central Valley. The Central Valley is a vast, nearly flat depositional plain dominated by agricultural land uses. A geometric pattern of orchards, vineyards, row crops, pastures, roads, and canals dominates the landscape.

The towns and cities in the Central Valley form urban islands within the agricultural landscape. Due to the lack of topographic variation and the dense vegetation canopy in most of the older urbanized areas, smaller towns and cities are usually not very visible from outside their immediate boundaries. Concentrations of trees and high structures such as water towers and grain silos are often the only landmarks easily visible from beyond the urbanized areas.

STUDY AREA

The hills of the Diablo Mountains form the western edge of the Study Area, and slope gently down to the valley floor. Most of the Study Area is relatively flat. Interstate 5, which traverses the western edge of the Study Area, affords excellent views across the valley to the east. The San Joaquin River, which defines the eastern edge of the Study Area, and a number of irrigation canals are the primary surface hydrologic features. The visibility of these features is generally limited to localized foreground views due to the flat topography and vegetation screening.

Four distinct types of vegetation largely determine the aesthetic character of the Study Area:

- Agricultural croplands such as alfalfa, tomatoes, and other row crops;
- Orchards;
- The extensive tree cover within the developed portions of the city (parks, boulevards, and residential neighborhoods) accented by tall palm trees planted along major paths and activity nodes; and
- Riparian vegetation along the San Joaquin River.

Within the city, the extensive tree cover in the residential areas is the predominant scenic resource. The arrangement of these vegetation types forms a strong geometric landscape pattern characterized by a patchwork of broad open fields and highly enclosed orchards. The small isolated clusters of tall mature trees surrounding many of the older farm buildings add a random vertical punctuation to this otherwise strong, regular pattern. With very few exceptions, the edge of the urban area is visually screened by orchards. As a result, the surrounding agricultural landscape has a high degree of visual cohesiveness, and does not convey the sense of suburban encroachment common in the agricultural areas surrounding many valley towns and cities.

OVERALL URBAN PATTERN

The original Patterson townsite is roughly defined by four streets--First Street, C Street, 7th Street, and L Street. The city was planned in the early 1900s by the city's founder, Thomas W. Patterson. Patterson envisaged a town of beauty and distinction and used the plan for Washington D.C. as a guiding design precedent. Thus the new town was given a very formal and distinctive urban pattern, with axial and diagonal boulevards emanating from a circular town center.

Outside the city center, these boulevards overlay a square grid which eventually gives way to the larger gridded township pattern of the surrounding agricultural landscape. The eastern portion of the town center abuts the Southern Pacific Railroad alignment and Second Street (Highway 33), the city's major thoroughfare.

The city's major boulevards lead to the downtown and span a gradient of city land uses, serving to unify the entire city.

The dense concentration of mature street trees is a positive urban design asset. The boulevard plantings of mature date palm trees gives a magnificent visual quality to the eastern portion of Las Palmas Avenue from First Street to the San Joaquin River. These palms, planted at the time of the town's founding, are a distinctive and valuable scenic and historical resource. In other parts of the city, the cover of mature street trees transform residential streets into lush, shaded arcades. The City of Patterson has achieved high scenic quality and an uncommon degree of visual coherence by following a well-designed street tree plan.

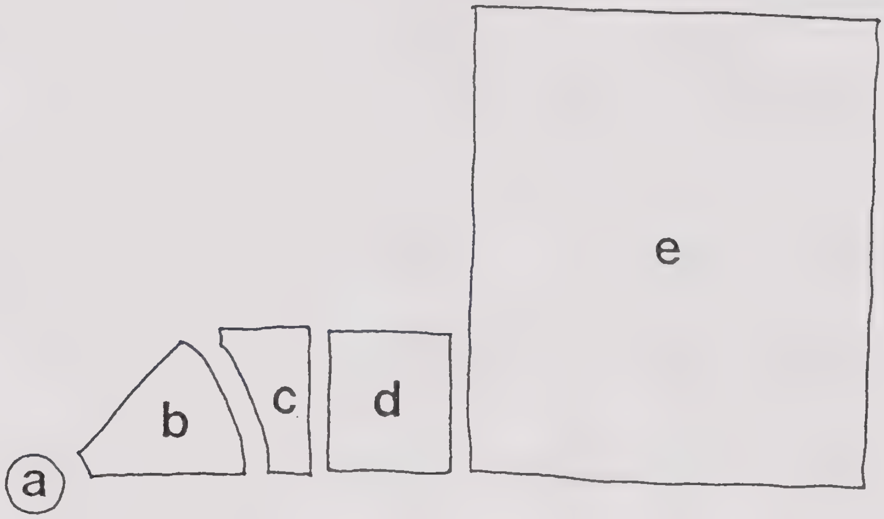
North and South City Parks, which flank Las Palmas Avenue between Second Street and the Plaza circle, provide an excellent public recreation and visual amenity. The strategic location of this park area links Highway 33 and the downtown area, and thus serves as an important gateway to the city.

VISUAL RESOURCE/URBAN DESIGN DISTRICTS

Uses within the city are also clearly organized and contained in distinctive urban forms as illustrated in Figure X-1. The circular town center (Area A in Figure X-1) accommodates public parkland and the central Plaza building, an important historical and visual landmark. As the streets extend out from the plaza circle in a spoke pattern, civic and commercial uses are contained in the triangular wedges between the streets (Area B). Beyond El Circulo Avenue, a band of irregularly shaped parcels (where the circular pattern meets the grid) which also contains commercial uses and a number of public and quasi-public facilities, such as churches, schools, and meeting halls (Area C). Beyond this, residential uses predominate in small-scale square blocks (Area D, and agricultural uses surround the city (Area E).

Figure X-1

URBAN FORMS



Combined, these distinctive spatial and use patterns give Patterson a strong sense of place and a delightful, cohesive urban environment. They also provide the city with an excellent set of clearly defined design precedents for future urban growth. More recently developed urban patterns outside the original town plan, however, bear little relationship to the existing urban patterns.

The Study Area has been divided into six principal districts for the purposes of urban design analysis. These districts are defined primarily on the basis of the predominant land use and its attendant visual and urban character. These districts are listed in Table X-1, and the boundaries are shown in Figure X-2. Descriptions of these districts and their urban design characteristics follow.

Downtown Area

The majority of the downtown commercial and civic area is defined by El Circulo Avenue. The circular town center contains a public park area and the Plaza building, the oldest structure in the city. The Plaza building currently houses the Patterson Museum and the Patterson-Westley Chamber of Commerce. A number of large palm trees tower over the area, providing flag-like landmarks visible from many parts of the city. This central plaza terminates views down the city's major boulevards, clearly marking the location of this city's central hub.

Plaza Street, which surrounds the plaza area, has a large expanse of street, parking and sidewalk pavement, with little visual relief.

TABLE X-1

VISUAL RESOURCE/URBAN DESIGN DISTRICTS

DOWNTOWN AREA

- Civic Areas
- Commercial Areas

COMMUNITY SERVING AREA

RESIDENTIAL AREAS

- Historic Residential (Founding - 1940)
- Older Established Residential (1940-1970)
- Recent Residential (1970-present)

HIGHWAY STRIP COMMERCIAL

INDUSTRIAL AREAS

AGRICULTURE/RURAL RESIDENTIAL

Source: Pepper Associates, June 1988.

Surrounding this central circle is a band of civic and commercial uses contained in eight triangular blocks. The two easternmost blocks (contiguous to the Southern Pacific Railroad line and State Highway 33) contain additional public parks. These areas are richly planted with mature palm trees and a variety of deciduous canopy trees, and provide an oasis of shade and greenery in the downtown area.

The remaining six triangular blocks contain commercial and civic uses including City Hall, the police and fire stations, the library, Municipal Court, post office and Water District office. Most buildings immediately adjacent to the central plaza occupy the corner of each triangular block, and thus have a strong street presence in the Plaza circle. They provide important three-dimensional definition to the central plaza area.

Most of these buildings are distinctive and visually appealing. The Del Puerto Hotel is especially richly designed and detailed, constituting an important visual and historical landmark. There are some commercial signs in this area that are inconsistent with its character and visual quality.

Because of the strength and clarity of the downtown urban pattern, building patterns which do not conform to the overall pattern of the city are particularly apparent and disruptive. There are a limited number of locations where this strong urban pattern and attractive aesthetic character is ill-defined or in need of improvement. One such location is the corner of Third Street and Salado where a relatively contemporary building has unfortunately been set back from the central plaza, effectively creating a "missing tooth" in

Figure X-2

VISUAL RESOURCE/URBAN DESIGN DISTRICTS

Source: Pepper Associates, 1988.

the overall urban fabric. An unscreened parking area occupies this strategic corner detracting from both its visual and urban design potential.

There are also a number of parcels dispersed throughout this area which are currently undeveloped, and constitute gaps in the greater urban fabric. Many of these parcels, especially those immediately across from South Park, embody great potential. Strategic urban infill could significantly enhance the formal character of the downtown area, and greatly add to its overall coherence and scenic quality.

Community-Serving Area

The majority of this district surrounds the civic and commercial downtown. This area contains several churches, and a number of other community-serving facilities such as schools and medical offices. Since these blocks are generally irregular in shape, they provide added visual interest. These blocks contain intermediate-scale structures, thus this district serves as both a physical and functional transition area between the downtown and surrounding residential neighborhoods.

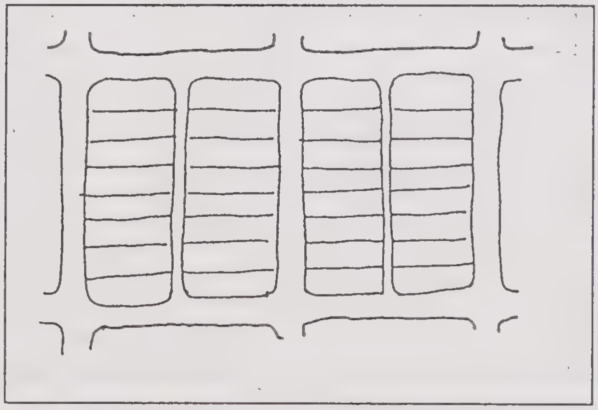
Residential Areas

Residential Areas are divided into three sub-districts: Historic Residential, Older Residential, and Recent Residential. These sub-districts reflect three general periods of development respectively; 1910 to 1940, 1940 to 1970, and 1970 to present. Each sub-district has a distinctive visual and urban character.

Historic Residential

This district was originally planned at the time of the town's founding, thus the street and block patterns in this area have been in place for many years. Residences in this district, however, have been built over a number of years, gradually filling in the established block pattern. While the earliest homes in the area date to the early 1910s, some homes were constructed within the last decade. This district also contains a variety of housing types and scales.

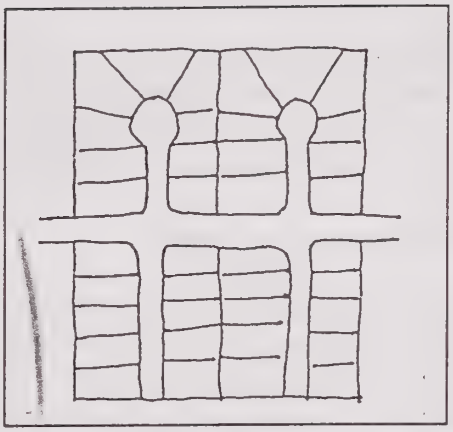
The distinctive block pattern is shaped by a very regular gridded street pattern, with well-defined blocks of similar size and orientation. The parcelization pattern is also highly regular, with almost all residential parcels of similar size and proportion. Nonetheless, variations in housing types and periods of construction have kept these neighborhoods rich in character. The overall orderly housing pattern is aesthetically pleasing with individual dwellings adding articulation and aesthetic diversity.



Each block is divided by an unpaved alley which provides access to a number of garage units and other backyard structures.

Mature street trees line the streets throughout these neighborhoods. These trees provide an important widespread scenic amenity, and also play an important role in unifying the aesthetic character of these neighborhoods.

Older Residential

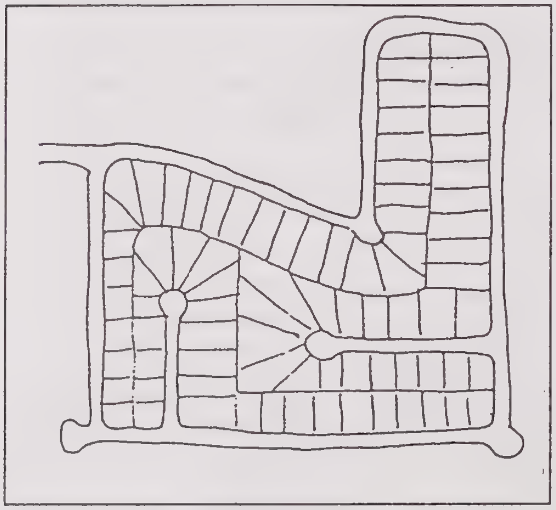


The older residential areas within the city were developed generally during the 1940-1970 period. The homes in this district resemble many of the homes in the historic residential district, the block and street patterns, however, are generally less geometric. Although many streets are laid out in square blocks, there are also many which end in cul de sacs. This eroded grid pattern has circulation patterns that are quite different from those in the historic residential parts of the city.

These areas are generally well landscaped with mature trees and vegetation, however, the presence of street trees is not as strong as in the historic residential district. Street patterns in this district have only a weak relationship to the original city plan. They are generally not strongly linked to the city's major boulevards, and do not reflect the city's formal organization. As such, they exist somewhat independently of the larger urban patterns.

Recent Residential

The city contains several areas of recent residential construction. These areas of the city have a discernably different urban pattern and aesthetic character from the older development patterns. The clearly organized, formal grid pattern of the historic residential districts is replaced by informal, irregular block patterns with curving streets and many cul de sacs. This street pattern, typical of much of the recent suburban development in California, lacks the strong sense of organization and orientation found in historic residential areas. It also lacks a sense of connection to the downtown and community at large.



The site planning of these areas is also characterized by an inward focus. Homes are generally oriented toward the inner portions of the development. Large walls and fences often line major access streets to these developments, augmenting the appearance of detachment from the rest of the city. Thus these development patterns tend to exclude, rather than embrace the city as a whole.

Another attribute common to these areas is the lack of mature landscaping. Ironically, although some of these new subdivisions were sited in established orchards, none of the mature vegetation was retained in the new development.

Commercial Strip Areas

Commercial strip uses in Patterson are confined to the west side of Highway 33 (Second Street). This area primarily accommodates agricultural and auto-related businesses. The density of buildings is low, and buildings themselves are generally unobtrusive. However, a number of large areas of deteriorated pavement detract from the area's visual quality.

Industrial Areas

Patterson's primary industrial area is contiguous to First Street, the railroad alignment, and State Highway 33. This area is dominated by the Patterson Frozen Foods Company. Industrial structures such as silos and water tanks are prominent city landmarks. This industrial area constitutes an important element is the city's overall visual character because it is located along the primary entrances to town and has the largest structures in the city.

A second, smaller industrial area is contained in two pockets along Sperry Avenue and Poppy Avenue. Agricultural-related industrial uses predominate in this area.

Agricultural and Rural Residential

This district consists of lands in agricultural production as well as lands containing ranchettes and farmhouses. The transition between this district and the urban uses takes several forms.

In much of this district the scenic quality is quite high. Although most agricultural operations are well maintained, even poorly maintained outbuildings have a picturesque character. Agricultural crops and orchards provide important scenic elements and the rural residences and farms give a sense of human scale to the district. Due to the flat topography, and the height and density of the vegetation in much of this district, the urbanized portion of the Study Area is largely screened from view from these surrounding agricultural and rural lands.

The greatest spatial and visual contrast in the Study Area occurs in this district. Established orchards provide strong spatial enclosure and constitute visually-impermeable walls of vegetation. Since orchards provide a near continuous ring around the urban areas, the screening they provide serves to visually contain urban development. Croplands, on the other hand, consist primarily of low-lying crops, creating the open quality of the Central Valley.

Both the orchards and row crops are characterized by strong geometric patterns. The heights, spacing, edges, colors and textures of each field or orchard have a great deal of uniformity. As such, this landscape has a strong formal aspect, not unlike the pattern of the city's original townsite.

The small clumps and groves of mature trees which typically surround farm buildings accent and interrupt the otherwise strong geometric pattern of these croplands.

PRIMARY CIRCULATION ROUTES AND CITY ENTRIES

Three major streets constitute the primary paths which define and serve the city's major districts: Highway 33 (Second Street), Las Palmas Avenue, and Sperry Avenue.

The city's primary entrances along Highway 33 are dominated by industrial and strip commercial uses. Although these entry points are clearly marked by signs, the built environment does not support this clear sense of entry. The south city entry is dominated by an automobile dealership. The north city entrance is characterized by agricultural uses and open lands.

Conversely, the Las Palmas Boulevard entrance to the city from the east is strongly and beautifully marked with rows of mature palms on each side of the street. This entrance is, therefore, both clearly-defined and very aesthetically pleasing.

Although the Sperry Street entrance from I-5 occurs at an area of transition from agriculture to urban development, it does not create a memorable city entryway. The recently constructed residential development near this entrance is dominated by a large wall separating residences from the roadway, and does not provide a welcoming or "friendly" entrance to the city.

Scenic Highways

Scenic Highways are segments of federal, state, or local roads that have been designated by the state or local government as roads traversing scenic corridors and for which the state or local government has developed a program for protection of the scenic corridor. There are three levels of scenic highway designation: State Scenic Highways, County Scenic Highways, and Local Scenic Highways. At the present time there are no roads in the Study Area designated as or under consideration for designation as Scenic Highways. Las Palmas Avenue warrants consideration for inclusion as a local or county scenic highway.

FINDINGS

- Patterson's original townsite is characterized by distinctive, clearly-defined, formal urban patterns. Composite street patterns (circular town center, axial and diagonal boulevards, and residential grid) give the city a strong sense of "place" and enhance the city's overall coherence.

- Uses within the city are clearly organized and contained in distinctive block configurations.

- The extensive cover of mature street trees provides a high quality scenic amenity and cohesive visual character. The City has a highly successful street tree program.

- The overall urban structure and visual character of Patterson benefits from its clearly-defined, focused commercial and civic area downtown. The absence of competing commercial areas in Patterson has enabled the downtown to remain the focus of pedestrian/recreational activity.

- The downtown contains a number of distinctive and visually appealing buildings. Most commercial and civic buildings in this area are of a scale and character appropriate to the block and street pattern.

- The introduction of new building forms and patterns that do not conform to the city's existing urban configurations would be particularly apparent and disruptive.

- The downtown area contains a number of vacant lots, providing potential for urban infill.

- The central plaza functions as both the focus or "hub" of downtown, and as a visual terminus for views down the city's primary streets (view corridors).

- The Community Serving District provides a successful physical and functional transition between downtown commercial area and surrounding residential neighborhoods. Both the irregularly-shaped block patterns, and the scale and design of community serving facilities add visual interest and distinctiveness to this district.

- While the originally established block pattern of the Historical Residential District is clearly defined, bearing a strong, successful relationship to the city as a whole, the block/street patterns in the Older and Recent Residential Districts fail to achieve this.

- The majority of the city's strip commercial development is modest in scale and generally unobtrusive. Additional commercial infill development consistent with good urban design practice could enhance this commercial corridor.

- The large industrial area located along Highway 33 constitutes an important element in the city's visual character and does not intrude unduly into the downtown area. The visual relationship between this area and contiguous uses could benefit from additional landscape treatments, however.

- The city entrance at East Las Palmas Avenue is beautifully marked with rows of mature date palms, creating a delightful and memorable city entrance.

- North and south city entrances on Highway 33 and the west city entrance on Sperry Avenue warrant clarification and visual upgrading, primarily through landscape treatments.

- The agricultural lands that surround the city are highly scenic, characterized by their strong geometric patterns. Agricultural lands form a patchwork of open and closed landscapes. The orchards function as a visual container for the city by visually screening urban development and the croplands provide expansive views.

APPENDICES

APPENDIX A

COMMUNITY CONCERNS SUMMARY REPORT

This report summarizes the results of an intensive three-pronged effort to identify community concerns about growth and development in the city of Patterson as the basis, in part, for data collection and policy development in connection with the revision of the Patterson General Plan.

The Consultants conducted a townhall meeting on April 6, 1988, at Patterson High School. The meeting was attended by approximately 90 residents of the Patterson area.

On April 27 and 28, 1988, the Consultant Team, headed by J. Laurence Mintier & Associates, conducted a series of informal interviews with City officials, including the five City Council members, five Planning Commissioners, and City department heads.

In addition to the interviews and townhall meeting, the City solicited comments from residents on their concerns by distributing a Community Response Form. This form was published in the *Patterson Irrigator*, mailed to the City's utility customers, made available at City offices, and distributed at the townhall meeting. By the end of May, the City received 175 completed forms.

All three efforts generally sought residents' responses to three questions: 1) what are the positive qualities or assets of Patterson; 2) what are the problems with Patterson; and 3) what issues should be addressed in the General Plan. There was obvious overlap in responses to the questions.

This report summarizes responses to these three general questions from the interviews, the townhall meeting, and the Community Response Forms. This summary does not purport to be a scientific opinion survey, such a survey not being necessary for the purposes of general issue identification. Rather, it records the Consultants' impressions of residents' perceptions of and concerns about Patterson. No attempt has been made in this summary to edit out contradictory comments or comments critical of City officials or to make the comments fit preconceived notions about the problems or opportunities facing Patterson.

POSITIVE QUALITIES AND ASSETS

The Community Response Form asked residents to list the three most important assets or qualities of Patterson which should be preserved or enhanced. The same question was asked during the individual interviews and at the townhall meeting. Three qualities stand out as the most important to Patterson residents: the small town, rural atmosphere; Patterson's unique downtown area; and the trees in Patterson.

Small Town, Rural Atmosphere

Most Patterson residents clearly like living in a small town, particularly for the social and cultural qualities that are often associated with small town living. Many mentioned the friendliness of Patterson's residents, the personal service from local business people, the sense of personal safety, the level of community concern and involvement, and the quality of life. Others appreciated Patterson because it is quiet and clean.

Aspects of the natural environment that give Patterson its rural quality were also mentioned. Many described the beauty of the town and its quiet atmosphere and serenity. Several mentioned the farmland and orchards, open space, and the city's clean air.

The Downtown Area

For many Patterson residents, the downtown area, or the "circle", is the key to Patterson's identity and heritage. It is the town's hub, heart, and focus. The unique spoke pattern of the streets and the historic buildings were mentioned frequently as distinct assets which should be preserved.

Trees

The trees in Patterson clearly are considered by many Patterson residents as fundamental to the city's charm and identity. Many Patterson residents express great sentimental attachment to the palm trees which line Las Palmas Avenue. Trees in general and the city's tree-lined streets were repeatedly listed as important features of Patterson.

Two other qualities mentioned frequently but less often than the first three include: the city's historic buildings and heritage and a range of public facilities and services.

Historic Buildings and Heritage

Patterson has a rich historic heritage reflected in its residents, culture, and structures. Many of the residents' families have lived in Patterson for generations. The city's heritage and historic buildings were listed often as important to Patterson residents. Specific buildings cited include the Del Puerto Hotel and the city's museum building. Many residents appreciated the historic quality of downtown. The older houses and neighborhoods were also mentioned by several residents as important features.

Public Facilities and Services

The city's parks were listed as an asset by many residents, particularly the downtown park area. Residents generally wanted expansion of parks and more recreational programs.

Many residents described Patterson's Police Department as a significant asset to city living. Other public facilities and services praised included the city's wide streets, its schools, hospital and medical facilities, fire department, and library.

Other Qualities and Assets

Other qualities and assets mentioned at least once by residents include the following:

- Affordable living
- Skyline view
- Proximity to Interstate 5
- East Las Palmas entry
- Housing quality
- Separation of residential and industrial development

- Large residential lots
- Apricot Fiesta
- Stores within walking distance
- Minimum of industry within city limits
- Growth
- Annual cleanup
- School property
- Water
- Churches
- Cemetery
- Paramedic service
- Sanitation service
- Progressive city/school staff
- Library reading hour for pre-school children
- School lunch program
- Del Puerto Canyon
- One-way streets in downtown circle
- Parking
- Right to vote for local mayor
- Mayor
- Local newspaper
- Crime prevention
- Jobs
- Centrally-located downtown business district
- Older Spanish architecture
- Good climate
- Compatibility of ethnic groups

PROBLEMS

The Community Response Form asked residents to list the major growth problems facing the City of Patterson. Similarly, those attending the townhall meeting and those individuals interviewed were asked to identify major problems in Patterson. The problems most often mentioned included the need for greater commercial development, traffic and parking, public services, the lack of recreational and entertainment facilities, and growth and planning issues.

Lack of Commercial Development

Topping the list of concerns about Patterson was the need for greater commercial development. Residents felt strongly that there is a need for greater shopping opportunities and greater competition. The lack of a shopping center or mall, major chain stores, supermarkets, and restaurants were described most often as the city's chief inadequacies.

Traffic and Parking

Traffic and parking were perceived by Patterson residents as significant problems for future growth. In particular, traffic and parking problems downtown were considered major constraints, considering the circular street pattern and five- and six-way intersections. Safety at these intersections was also a concern. Other specific traffic problem areas mentioned were Sperry Avenue, Las Palmas Avenue, and Highway 33.

Some residents' concern over future road expansion related to the potential for removing the trees along major throughways. Other residents expressed concern over the speed limit on Sperry Avenue and general traffic enforcement.

Public Services

A number of publicly-provided services were described as problems in association with future growth. The most frequently mentioned concern was school overcrowding. Financing schools and the siting of new campuses were also listed as potential problems.

Residents also expressed great concern over the city's sewer system, particularly the limitations on its capacity and the expense to expand it. Concerns over limitations in the city's water system and supply were also mentioned quite often.

Local drainage and flooding problems, particularly related to Salado Creek, were also related. Police service, the future of the volunteer fire department, the lack of medical services, particularly nursing/convalescent homes, road and street repair, the lack of public transportation, and limited library resources were also described as problems.

Recreation and Entertainment Facilities

The lack of parks and recreational facilities was frequently mentioned as a problem in Patterson. Many residents cited the need for a large park with recreational facilities and for a public swimming pool. Other desired facilities included a community center, golf course, and a senior center. The need for greater youth-oriented recreational opportunities was mentioned frequently.

Patterson residents also described a deficiency in entertainment facilities; their wish list included a theater, more restaurants, fast food restaurants for youth, and a bowling alley.

Growth/Planning Issues

A major category of problems identified by residents concerns the pace and quality of development in Patterson. Many residents are concerned about the impact of urban growth on agricultural lands, air and water quality, and the loss of Patterson's rural quality.

Some residents said that Patterson is growing too quickly, and that growth is changing the character of Patterson for the worse. A number of residents felt that there has been too much residential development. Most residents were concerned about unmanaged, unplanned growth. Many expressed concern over future kinds of development patterns, particularly over the separation of residential and industrial development.

Residents were also concerned with the quality of housing. Several residents felt there was too much low income housing in Patterson, while others felt that there was a lack of affordable housing and available rentals.

Miscellaneous Problems

Outside these broad categories of concerns, residents mentioned a host of other problems with Patterson, including:

- Drug problem
- The environment
- Noise
- Air pollution
- Toxic chemicals
- Litter near the high school
- Latch key children
- Racial imbalance
- No clear city identity
- Detention basin along Las Palmas
- Business community needs to agree about its future
- Postal service
- Industry not compatible with a bedroom community
- Not enough employment
- Lack of youth employment
- Lack of well-paying/white collar jobs
- Not finishing projects before starting others
- Existing shabby, unsightly areas
- Antiquated zoning standards
- Lots are too small in new housing development
- Small-town parochial attitudes
- Too much patch-work planning
- Lack of fresh produce in grocery stores
- No pedestrian crossing light at Las Palmas and Highway 33
- City hall chambers are not large enough
- East-west split in income and ethnicity

City Government

Of a different nature were complaints or comments residents expressed about the management of the City. These included:

- Lack of concern for new residents
- Too much attention paid to new residents
- Attitude of local officials
- More attention should be paid to citizen concerns
- Quicker city council action on proposals
- Voter apathy
- Extend term of mayor from two to four years

- Leadership in city council
- Too much industry control of city government
- Government red tape
- Lack of respect for original Patterson residents
- Lack of aggressive problem-solving

ISSUES THAT SHOULD BE ADDRESSED IN THE GENERAL PLAN

Responses to the questions about Patterson's assets and problems clearly identify major issues to be addressed in the General Plan. This section summarizes other issues identified in the interviews, at the townhall meeting, or in the Community Response Forms that do not fit easily into either of the two preceding categories or are of a very specific nature.

General Issues

- Attract more industry
- Improve rundown areas
- Develop more quality housing
- Develop condominiums
- Develop long-term architectural plan
- Planned growth
- Attract more people
- Stop industrial development
- Proper zoning
- Avoid strip development
- Direction of growth
- Expansion
- Balance population growth with commercial/industrial development
- Financing city services
- Need to foster long-term economic health
- Phase growth
- Set high standards for new development
- Protect the visual quality of the community

Specific Recommendations

- Close off circle to vehicular traffic
- Require larger residential lots
- Remove walls around new subdivisions
- Convert the circle to a mall
- Let Patterson Frozen Foods close off First Street
- Do something useful in the Fifth Street area of Northmead School
- Make the circle into a parking area
- Build a buffer to hide the industrial area along Highway 33
- Remove the historic monument in circle
- Move city hall out of downtown
- Change the light industrial area at Poppy and Sperry
- Enhance the East Las Palmas entrance

- Improve downtown area
- Spruce up industrial area near Patterson Frozen Foods plant
- Develop sign ordinance
- Implement rent control
- Develop more stringent building codes
- Convert the old town look with modern stores
- Convert the residential area between So. 2nd Street and 4th to commercial
- Implement more traffic rules education
- Develop more handicapped parking
- Clean up So. 3rd Street
- Require curbs and gutters on all streets
- Do not amend General Plan after adoption
- Extend Apricot Fiesta to a full week
- Install stop signs in residential areas
- Route through-traffic outside city limits
- Improve intersection at First Street and Las Palmas
- Clean up alleys
- Clean up low income housing areas
- Landscape new subdivisions
- Develop subdivisions on the outer edges of town
- Remove some of the downtown bars
- Place greater restrictions on the construction of fences
- Better control of new businesses
- Develop a new motel
- Develop a fruit/vegetable stand
- Make Patterson the "Carmel" of the valley
- Longer business hours
- Clean up trash
- Clean up junk cars
- Enforce noise control laws
- Provide summer school for children of all incomes
- Extend library hours
- Combine fire department and ambulance service
- Need industrial park
- Attract clean industry
- Expansion of city facilities
- Developers should finance growth
- Keep single family and multi-family residential development separate
- Dedicate improved parks and streets as part of subdivision process
- Pay careful attention to downtown land use
- Install speed bumps in residential subdivisions
- Maintain distinctive Westside community identity
- Develop detention basins away from street view
- Grow west toward I-5
- Consider need for auto dealership area
- Emphasize joint park/detention basin use
- Industrial development should be oriented toward I-5
- Keep the banks downtown
- Consolidate administrative office in city, allow police and fire departments to relocate

- Consider canals as city develops, need fencing
- Do not expand past Poppy Avenue to the south
- Develop homes with two-car garages
- Preserve downtown as a historic district
- Consider the impact of the County waste-to-energy facility on I-5
- Consider the impact of the tire-burning plant on Patterson
- Consider the future of the Navy base
- Develop parks adjacent to schools
- Need to protect rights-of-way for future street expansions
- Develop Sperry bypass

LIST OF THOSE INTERVIEWED

City Council Members

Wade Bingham, Mayor
Kay Corwin
Leo Halseth
Angelo Ielmini
Tom Klein

Planning Commission Members

Sam Hibma, Chairman
Peter Buchanan
Claude Delphia
Robert Glick
Mary Solorio-Brandt

City Staff

Dick Bull, Police Chief
Dick Gaiser, Fire Chief
John Nachbar, City Manager

APPENDIX B

SPECIAL STATE HOUSING REQUIREMENTS

In addition to requiring each city and county adopt a housing element, the California Legislature has enacted some very specific requirements to ensure that local regulatory procedures do not constrain housing development. The following summarizes these special housing mandates.

FINDINGS ON HOUSING LIMITS

Any city or county adopting or amending its general plan in a manner that limits the number of units that may be constructed on an annual basis must make specified findings concerning the efforts it has made to implement its housing element and the public health, safety, and welfare considerations that justify reducing the housing opportunities of the region (*California Government Code* §65302.8 and §65863.6).

HOUSING DISAPPROVALS AND REDUCTIONS

When a proposed housing development complies with applicable local policies and regulations in effect at the time the application is determined to be complete, the local agency may not disapprove the project or reduce its density unless it makes specified findings (*California Government Code* §65589.5).

SOLAR ENERGY SYSTEMS

Cities and counties may not enact zoning provisions that effectively prohibit or unnecessarily restrict the use of solar energy systems, except for the protection of public health or safety. Allowable "reasonable restrictions" include those that do not significantly increase the cost of the solar system or significantly decrease its efficiency and those that allow for an alternative system or comparable cost and efficiency (*California Government Code* §65850.5).

SECONDARY RESIDENTIAL UNITS

To encourage establishment of secondary units on existing developed lots cities and counties are required to either (1) adopt an ordinance based on standards set out in the law authorizing creation of second units in residentially zoned areas; or (2) where no ordinance has been adopted, allow second units by use permit if they meet standards set out in the law. Local governments are precluded from totally prohibiting second units in residentially zoned areas unless they make specific findings (*California Government Code* §65852.2).

MOBILEHOMES IN SINGLE-FAMILY ZONES

Cities and counties shall allow the installation of mobilehomes on permanent foundations on lots zoned for conventional single-family dwellings. Cities and counties shall only subject mobilehomes to the same development standards that apply to single-family dwellings. Any architectural requirements, however, shall be limited to roof overhang, roofing material, and siding material and

shall not exceed those which would be required of a single-family dwelling constructed on the same lot. Any area considered to be of special historical interest may be exempted from this provision (*California Government Code* §65852.3).

MOBILEHOME PARKS--PERMITTED USES

A mobilehome park is deemed by state law to be a permitted use on all land general planned and zoned for residential use. However, cities and counties may regulate mobilehome parks by use permit (*California Government Code* §65852.7).

MOBILEHOME PARK CONVERSIONS

Any subdivider filing a tentative or parcel map to be created from the conversion a mobilehome park to another use must prepare and file a report on the impact of the conversion on the displaced mobilehome park residents. The subdivider shall make a copy of the report available to each resident of the mobilehome park at least 15 days prior to the public hearing. The city or county with jurisdiction must consider the impact report at a public hearing and may require as a condition of approval of the conversion that the project sponsor mitigate the impacts of displacement. These provisions also apply when closure of a mobilehome park is the result of a decision by a local government entity or planning agency (*California Government Code* §65863.7 and §66427.4).

NOTIFICATION ON MOBILEHOME PARK CONVERSIONS

A city or county that has received an application for a mobilehome park conversion must notify the applicant at least 30 days prior to any hearing or action of state and local requirements for applicant notification or mobilehome owners and park residents concerning the proposed change. No action may be taken on the application until the applicant has satisfactorily verified that mobilehome owners and park residents have been properly notified (*California Government Code* §65863.8).

LIMITATIONS ON DEVELOPMENT PERMIT FEES

Fees charged by local public agencies for zoning changes, variances, use permits, building inspections, building permits subdivision map processing, or other planning services may not exceed the estimated reasonable cost of providing the service for which the fee is charged . Fees may exceed this limit only with a two-thirds vote of the electorate (*California Government Code* §54990 and §65909.5).

RESIDENTIAL ZONING

Cities and counties must zone a sufficient amount of vacant land for residential use to maintain a balance with land zoned for non-residential use (e.g., commercial and industrial) and to meet the community's projected housing needs as identified in the housing element of the general plan (*California Government Code* §65913.1).

RESIDENTIAL SUBDIVISION STANDARDS

Cities and counties may not impose standards for design and improvement for the purpose of making the development of housing for any and all economic segments of the community infeasible. Furthermore, it shall consider the effect of ordinances adopted and actions taken with respect to the housing needs of the region in which the local jurisdiction is situated (*California Government Code* §65913.2).

COORDINATED PERMIT PROCESSING

Each city and county must designate a single administrative entity to coordinate the review and decision-making and provision of information regarding the status of all applications and permits for residential, commercial, and industrial developments (*California Government Code* §65913.3).

DENSITY BONUSES

When a developer agrees to construct at least 20 percent of the total units in a housing development for lower income households, 10 percent of the total units for very low income households, or 50 percent of the total dwelling units for qualifying senior citizens, the city or county must either grant a density bonus and at least one other concession or incentive, or provide other incentives of equivalent financial value. The developer must agree to ensure continued affordability for all lower income units for 30 years (10 years under particular circumstances). The density bonus must increase by at least 25 percent the other maximum allowable density specified by the zoning ordinance and the land use element of the general plan. Each city or county must set up procedures for carrying out these provisions (*California Government Code* §65913.4 and §65915).

DENSITY BONUSES FOR CONDOMINIUM CONVERSIONS

When a developer proposing to convert apartments to condominiums agrees to provide at least 33 percent of the total units in the proposed condominium project for low or moderate income households, at least 15 percent of the total units for lower income households, the city or county must either grant a density bonus or provide other incentives of equivalent financial value. The density bonus must increase by at least 25 percent over the number of apartments to be provided within the existing structure proposed for conversion (*California Government Code* §65915.5).

CEQA AND DENSITY REDUCTIONS

Cities and counties may deny or reduce the density set forth by the general plan for a housing project only as a mitigation measure for a specific adverse impact upon public health or safety pursuant to the California Environmental Quality Act and only when there is no other feasible mitigation that would achieve comparable density results (*California Public Resources Code* §21085).

RESIDENTIAL ENERGY CONSERVATION

Cities and counties are required to adopt energy conservation standards for new residential dwellings (excluding apartment houses with four or more stories and hotels). This law went into effect June 15, 1983.

REDEVELOPMENT REPLACEMENT HOUSING

Every redevelopment plan must contain provisions that provide replacement housing on a "one-for-one" basis for low and moderate income persons displaced by redevelopment activity. (*California Health and Safety Code* §33334.5).

TAX INCREMENT FUNDS FOR HOUSING

Redevelopment agencies must use at least 20 percent of tax increment revenues generated by a redevelopment project to increase and improve the community's supply of housing for persons of low and moderate income. Certain findings may be made by the agency to set aside less than 20 percent if no need exists for such housing, if less than 20 percent is required to meet the need, or if a substantial effort to meet the needs is being made (*California Health and Safety Code* §33334.2).

COMMUNITY CARE FACILITIES

A residential facility which serves six or fewer persons shall be considered a residential use of property, and the residents and operators of the facility shall be considered a family. No conditional use permit, zoning variance, or other zoning clearance shall be required which is not required of a family dwelling of the same type in the same zone (*California Health and Safety Code* §1566.3 and §1567.1).

COMMUNITY CARE FACILITIES FOR THE ELDERLY

A residential facility for the elderly which serves six or fewer persons shall be considered a residential use of property, and the residents and operators of the facility shall be considered a family. No conditional use permit, zoning variance, or other zoning clearance shall be required which is not required of a family dwelling of the same type in the same zone (*California Health and Safety Code* §1569.84).

HOMES FOR MENTALLY DISORDERED, HANDICAPPED PERSONS, OR DEPENDENT AND NEGLECTED CHILDREN

A state-authorized, certified, or licensed family care home, foster home, or group home serving six or fewer mentally disordered, or otherwise handicapped persons, or dependent and neglected children shall be considered a residential use of property. Such homes shall be a permitted use in all residential zones (*California Welfare and Institutions Code* §5116).